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See Page 77.



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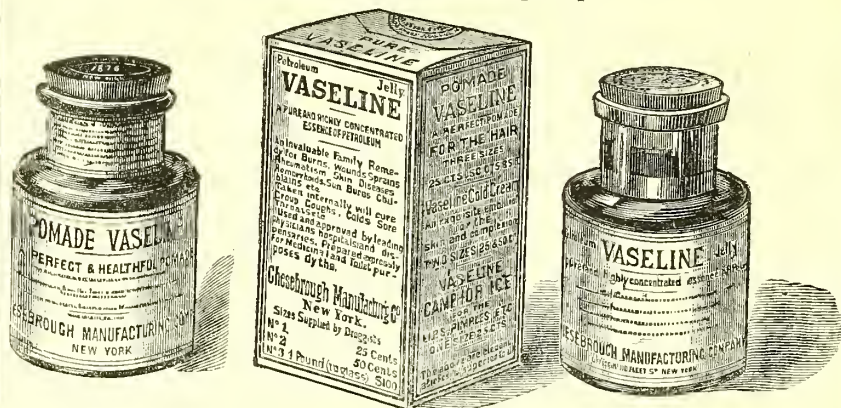
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Paris, 1878.

GRAND MEDAL AND
DIPLOMA,

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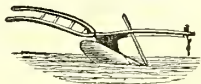
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All the above Tins are neatly wrapped ready for sale. The One-Pound Tins are returnable at 6/- per dozen.

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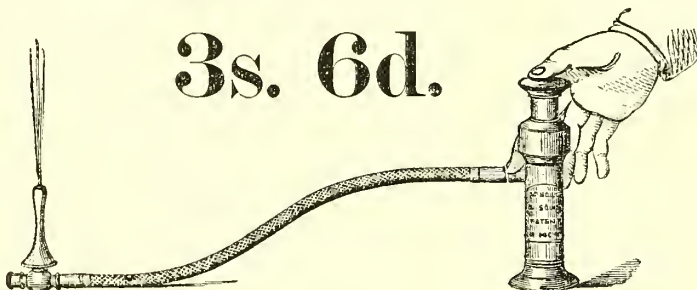
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MITRE SHAPE—Small, Middle, and Large, per dozen, 12s., 14s. 6d., 16s.

For other descriptions, see Quarterly Price Current, pages 76 and 77.

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LONDON, 1862.

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N.B.—Owing to the failure of the **VIOLET** crop, however, this Extract is advanced in price, and will probably go higher still. Purchasers are warned against the spurious Ext. Violets already in the market.

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At 60/- per cwt., Genuine, and sweetly perfumed.

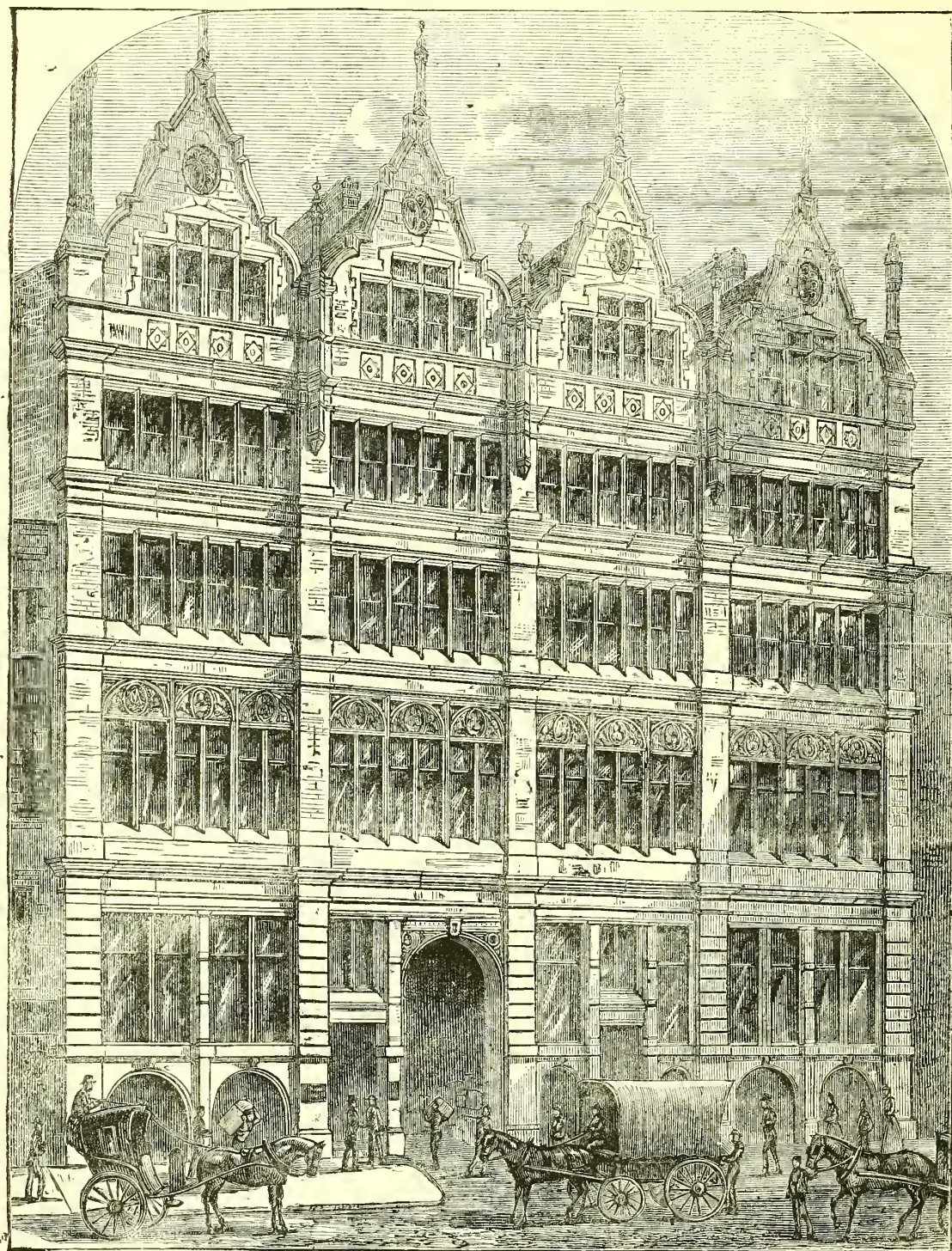
This Soap is recommended to the Trade as the best value that can be obtained. Embossed Squares, 6 to lb., and in 14-lb. Boxes.

CASH DISCOUNT, 10 PER CENT.

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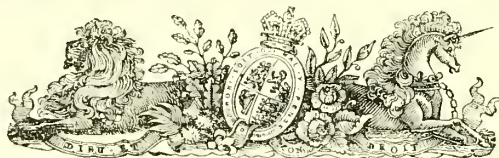
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By Her Majesty's



Royal Letters Patent.

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YOUR attention is directed to all the articles contained in this Circular, but more particularly to the various Effervescent Preparations manufactured under the above Patent, which have hitherto been introduced in a granulated form. Granulating is performed by spreading the various compounds on a hot plate of metal until the ingredients are partly melted. By this process a great loss of strength is sustained from evaporation. The improvement by the Patent under which Citrate of Magnesia and other Effervescent Articles are produced is derived from the various compounds being made into cubes (or square blocks) by a Cold Process which ensures greater strength, superior quality, and a prolongation of the effervescence. In this form it is highly appreciated, pronounced by known authorities to be a great improvement, and will keep fresh for any length of time in any climate.

The following Testimonial speaks for itself:—

“45 EUSTON SQUARE, LONDON, 28th July, 1879.

“I have carefully submitted to examination, as well as practically employed (both recently and last year) the Citrate of Magnesia manufactured by Messrs. WHEELER & Co. The purity of its composition and the improved mode of preparation, by compression, render it superior to any other form of Citrate of Magnesia with which I am acquainted. It is especially to its compressed condition that this superiority is due, as the gaseous constituents are retained for a longer period than is the case with ordinary Citrate of Magnesia, thus prolonging the effervescence when water is added, making it very agreeable to take, and increasing its efficiency. It is of considerable value as a pleasant cooling drink, and, when taken in sufficient quantity, constitutes a mild and safe aperient.

“WM. ABBOTTS, M.D., M.R.C.P., London,

“*Lately Editor of the 'Public Health Journal,' Physician to the Metropolitan Free Hospital, to the North London Consumption Hospital, &c.*”

In the Highest State of Perfection.

PATENT COMPRESSED EFFERVESCENT CITRATE OF MAGNESIA.

In Bottles, containing 7 lbs., and in Bottles of 2 lbs., 1 lb., $\frac{1}{2}$ lb., and $\frac{1}{4}$ lb.

N.B.—A Special Preparation for Hot Climates, marked H. C.

PATENT COMPRESSED EFFERVESCENT UNIVERSAL HEALTH-GIVING TONIC, CITRATE OF QUININE AND IRON, ETC.

In Bottles, containing 1 lb., $\frac{1}{2}$ lb., and $\frac{1}{4}$ lb.

PATENT COMPRESSED EFFERVESCENT SODA WATER.

In Bottles, containing 1 lb. Twelve in a Box.

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In Bottles, containing 1 lb. Twelve in a Box.

Messrs. WHEELER & CO. are also Manufacturers of

TRIPLE EXTRACT LAVENDER WATER,

Made from a Recipe 200 years old.

In Globe Stoppered Bottles, containing 3 oz., 4 oz., 6 oz., and 10 oz.; and Winchester, 90 oz.

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FACE POWDER, OR POUDDRE DIAPHANE,

In Packets, price 3d., most delicately Tinted and Perfumed (Bouquet de la Reine).

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(A SPECIAL PREPARATION WITH BISMUTH),

Most delicately Tinted and Perfumed (à la Maréchale), in Boxes. This is superior to anything hitherto produced in London, and is in all respects equal to the choicest production of Paris.

SUPERFINE CRETA PRÆPARATA,

In 7-lb. Boxes and 2-cwt. Casks.

SUPERFINE CRETA PRÆPARATA (PINK),

In 7-lb. Boxes,

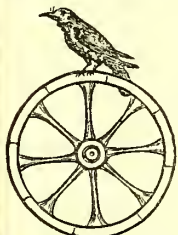
Of which the following Testimonial has been received:—

"45 EUSTON SQUARE, LONDON, December, 1878.

"The samples of Creta Præparata which have been forwarded to me by Messrs. WHEELER & Co. for examination are of the best and purest quality. Judging from this fact, and from the opinions given to me by Chemists to whom I have shown these specimens, it is evident that, owing to the great superiority of this preparation, it must eventually take the lead of all others of the same class.

WM. ABBOTTS, M.D., M.R.C.P., London,

"Formerly Senior Physician to the Ear and Throat Infirmary, Physician to the North London Consumption Hospital, &c."



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OZOKERINE

(REGISTERED).

A new preparation **PERFECT** as a **BASIS** for **OINTMENTS**, of admirable consistency, bland, emollient, antiseptic, and healing.

CANNOT BECOME RANCID.

"Moderate in price, and deserving a careful trial."—BRITISH MEDICAL JOURNAL.

"A valuable and useful substance, and will in all probability be very largely used."—MEDICAL TIMES AND GAZETTE.

"Will take a high position among our other pharmaceutical preparations."—MEDICAL PRESS AND CIRCULAR.

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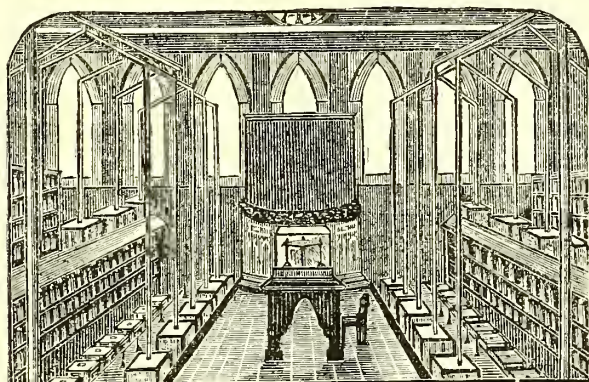
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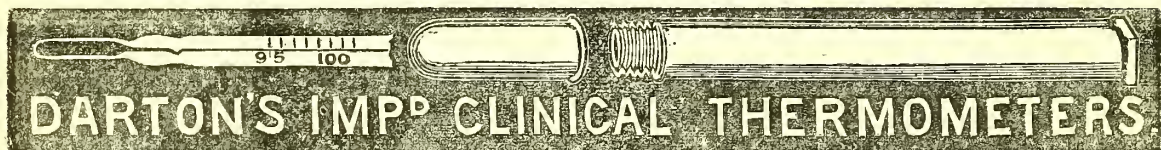
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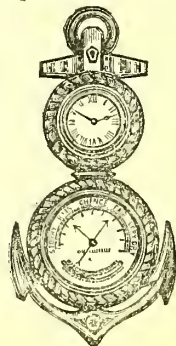
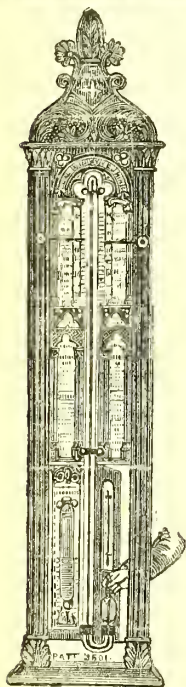
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The Lectures in Anatomy, Physiology, and Chemistry are recognised by the University of Edinburgh, and attendance upon any two of these Courses for six months will count as one of the Winter Sessions required by the University for the M.B. degree.

The next Session will commence on the 1st October.

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J. HOLME NICHOLSON, Registrar.

KING'S COLLEGE, LONDON. — MEDICAL

DEPARTMENT.—The INTRODUCTORY LECTURE will be given on Wednesday, October 1st, by Professor A. B. DUFFIN, M.D., at 4 P.M.

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UNIVERSITY OF GLASGOW.—The

MEDICAL SESSION will be opened with an Introductory Discourse by Professor BAYLEY BALFOUR, M.B., D.Sc., on Tuesday, the 28th of October, 1879.

WINTER COURSES.

Zoology, 9 A.M.—Professor Young.

Clinical Medicine,* 9 A.M.—Professor McCall Anderson.

Clinical Surgery,* 9 A.M.—Professor George Buchanan.

Chemistry, 10 A.M.; and Chemical Laboratory, 9 A.M. to 4 P.M.—Professor Ferguson.

Anatomy, Senior, 11 A.M.; Junior, 2 P.M.; and Practical Anatomy, 9 A.M. to 4 P.M.—Professor Cleland and Dr. William Allen, and other Demonstrators.

Practice of Physic, 11 A.M.—Professor Gairdner.

Materia Medica, 12 noon, and Pharmaceutical Laboratory.—Professor Cowan and Dr. Tennant.

Institutes of Medicine, 12 noon, and Physiological Laboratory.—Professor M'Kendrick, and Dr. John Barlow, the Muirhead Demonstrator.

Surgery, 1 P.M.—Professor Macleod.

Midwifery, 4 P.M.—Professor Leishman.

Public Health.—Professor Simpson.

SUMMER SESSION.—During the Summer Session the Courses of Botany (Professor Bayley Balfour), Practical Chemistry, Forensic Medicine (Professor Simpson), and Clinical Medicine and Clinical Surgery are given. There are also Courses of Anatomy (Lectures on Embryology), Practical Anatomy, Practical Zoology, Vegetable Histology, and Practical Botany, Practical Physiology (including Histology), Practical Pharmacy, Practical Pathological Histology, Operative Surgery, and Diseases of the Eye.

LECTURERS.

Pathology—The Courses of the Pathologist of the Western Infirmary Dr. Joseph Coats, and of the Pathologist of the Royal Infirmary, Dr. David Foulis, are recognised.

Diseases of the Eye—Thomas Reid, M.D., Waltonian Lecturer (Summer Course).

Insanity—Dr. David Yellowlees, Royal Asylum, Gartnavel (Summer Course).

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ASYLUM, INFIRMARIES, AND DISPENSARIES.—In Glasgow there are Infirmarys or Dispensaries for Fevers, and for Diseases of the Eye, Ear, Throat, and Skin; and the Royal Lunatic Asylum, Gartnavel, under the superintendence of Dr. David Yellowlees, is available for the clinical study of Insanity.

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Full particulars connected with the course of education and examination required for the Degrees, and the Preliminary Examination required to be passed by Students before beginning medical study, will be found in the University Calendar; or a Syllabus of the regulations, fees, &c., may be obtained by applying to Mr. Moir, Assistant Clerk of Senate.

* Besides the Lectures of the Professors who are entitled to teach clinically, the Lectures of the other Physicians and Surgeons of the Western and Royal Infirmarys recognised by the University Court are accepted for graduation.

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The Winter Session commences on October 1st, and the Summer on May 1st. Students can enter at either Session. Two Entrance Science Scholarships, of £60 and £40, for first year's Students, are awarded in October. In addition to ordinary Prizes, amounting to £200, the following additional Scholarships, Medals, &c., are given, viz., the "William Tite" Scholarship, £30; College Scholarship, 40 guineas a year for two years; "Mugrove" Scholarship, of same value; "Solly" Medal and Prize; "Cheselden" Medal; "Mead" Medal; Treasurer's Gold Medal; "Grainger" Prize, &c.

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The WINTER SESSION will open on Wednesday, Oct. 1, with an Introductory Address at 3 p.m. by Dr. Sydney Compland. The Medical School attached to the Hospital provides the most complete means for the education of Students preparing for the University of London, the Colleges of Physicians and Surgeons, and the Society of Apothecaries. Two Entrance Scholarships of the annual value of £25 and £20, tenable for two years, will be competed for on September 29 and following days. Further information may be obtained from the Dean or the Resident Medical Officer at the Hospital.

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When the Introductory Address will be delivered.

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VETERINARY MEDICINE AND SURGERY:

Professor WILLIAMS, F.R.S.E., F.R.C.V.S., Professor of Veterinary Surgery, and Consulting Veterinary Surgeon to the Highland and Agricultural Society of Scotland.

ANATOMY:

Professor VAUGHAN, F.L.S., M.R.C.V.S.

PHYSIOLOGY:

Professor YOUNG, M.D.

CHEMISTRY AND TOXICOLOGY:

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NATURAL HISTORY (Botany and Zoology):

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The SESSION COMMENCES on MONDAY, OCTOBER 6th.

Programmes may be obtained on application at the College, or by letter or post card, addressed to the Secretary, Royal College of Science, Stephen's Green, Dublin.

FREDERICK J. SIDNEY, LL.D., Secretary.

SOUTH LONDON SCHOOL OF PHARMACY.

A small section of the school, composed of Students not presenting themselves for examination this Session, will meet specially to resume their studies on September 1st for the October examination. There are a few vacancies in this class which can be filled by students already possessing some knowledge (or who may have failed after a superficial course of study) on special terms, for which apply to the Secretary,

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OF THE

CHEMIST AND DRUGGIST

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LONDON SUBURBS.—Increasing Dispensing light Retail and Prescribing Business, centre of large and rapidly-increasing neighbourhood; splendid position; no opposition; good house, with garden and private entrance; shop well fitted and stocked; half rent can be let off; can be rapidly increased by a pushing man; price to an immediate purchaser £120. "Chemist," 120 Brayard Road, Peckham, S.E.

A BONA-FIDE MIXED BUSINESS, in a thickly-populated district, four miles out of Manchester; wine and spirit license, which pays 35 per cent.; strictest investigation invited; this is a rare chance, owner being compelled to go abroad; average weekly receipts £16 to £20 in the present depressed state of trade; price £550; no goodwill. Address, "Chemicus," Office of THE CHEMIST AND DRUGGIST, 44A Cannon Street.

CHEMIST AND DRUGGIST.—A Retail Dispensing, very good Prescribing, and Tooth-extracting, &c., business, successfully carried on for eighteen years, and now in good working order, in the best leading thoroughfare of Bootle, near the new north-end docks, which extension will bring a vast increase of business. A rare opportunity for a surgeon to work the business and establish himself. Address, J. M., Evans, Sons & Co., Liverpool.

CITY OF LONDON.—For Sale, an established Business in Proprietary Articles; trading chiefly with Chemists; now returning a net profit of £800 per annum and increasing yearly; price, inclusive of name, book-debts, stock, recipes, and two months' services (if required) of present proprietor, £950. Address, with references (failing which no reply), "Americus," Office of THE CHEMIST AND DRUGGIST, 44A Cannon Street, London.

RARE OPPORTUNITY.—To be Sold, at once, a genuine Family Dispensing and Retail Drug Business, with Patent Medicines, &c., proprietor having two on hand; best thoroughfare in town; present returns nearly £20 weekly; profits good; a fortune may be made in ten years with personal attention; 6 years' lease. Valid reasons for disposal of same, and all particulars, may be had on application to Hugh Edgson, Chemist, 6 Albert Street, Nottingham.

WORCESTERSHIRE.—To Surgeons and Chemists.—For immediate Disposal (in consequence of the death of the late proprietor, a M.R.C.S., London, and by whom it was used as an open Surgery), a neatly-fitted, light Retail and Dispensing Chemist's Shop; it would be suitable for a steady young man about to commence, as there is already the nucleus of a good business; incoming, including fittings, fixtures, stock, &c., £200. Apply to Mr. Kimberley, 22 Balsall Street, Birmingham.

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DRUG, OIL, and COLOUR TRADE.—For Sale, by private treaty, as a going concern, the old-established Business of wholesale and retail Druggists, Oil and Coloursmen, heretofore carried on by Messrs. Allport Brothers, at No. 6 Snow Hill, Birmingham. The sale will comprise the Stock-in-trade, which is well assorted and in good order, the steam engine and plant for paint-grinding, and the conveniently arranged trade fixtures and fittings in the shop and warehouses, together with the books of the trade and good-will. The premises are extensive, and well adapted for the trade, with entrance at the back for heavy goods, and are held at a reasonable rental. For further particulars apply to Messrs. Wenham Brothers & Agar, Public Accountants, 50 Ann Street, Birmingham, and Messrs. Ryland, Martineau & Carslake, Solicitors, Cannon Street, Birmingham.

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UNQUALIFIED ASSISTANT required by a Surgeon, in a large Midland town; one who is expert at Midwifery, and would like opportunity to qualify. Address, O. K., 23 Needles Alley, Birmingham.

A STEADY competent Assistant, for a Mixed country business; hours easy; Sunday work small. Apply, stating salary required, and reference, to Robert Campion, Chemist, Harlow, Essex.

IMMEDIATELY, a Junior; aged 19 to 21; used to a Mixed country business; of obliging manners and good address; hours 7.30 A.M. to 8 P.M.; indoors. Apply, with usual particulars, enclosing carte, to be returned, to Messrs the Executors of R. Robinson, Lockwood, Huddersfield.

WANTED, a steady Young Man, as Junior Assistant in a country town, to a general business of Chemist, Grocer, Wine and Spirit Merchant; state salary required, and particulars. Apply to R. Burgess, Chemist, &c., Winsford, Cheshire.

WANTED, early in September, by a medical man in Norfolk, an accurate and reliable Dispenser and Book-keeper; outdoor; must be accustomed to the routine of a surgery, and well recommended for sobriety and steadiness; preference given to a total abstainer. Apply, with references, stating age, &c., and enclosing carte, to T. G. Wales, Surgeon, Downham Market.

APPRENTICE Wanted; one who has passed Preliminary examination preferred; a comfortable home, and every facility for gaining a thorough knowledge of the business guaranteed; moderate premium required. Apply, stating particulars, to C. J. Harrold, A.P.S. (by examination), 11 Green's End, Woolwich.

ASSISTANTS WANTING SITUATIONS.

WANTED, a Situation as Junior (Preliminary passed); Brethren preferred. C. F. White, Chippenham.

AS JUNIOR, or Dispenser to a Surgeon; aged 20. H. Hall, Wotton-under-Edge.

AS ASSISTANT, with a view of early Succession, in a light Retail and Dispensing business. W. B. Clarke, Olney, Bucks.

WHOLESALE; by Advertiser; aged 25; well-up in London Wholesale. "Chemist," Richmond Road, Kingston-on-Thames.

TEMPORARY ASSISTANT, or Manager; in town or country; disengaged. J. T., 13 John Street, Pentonville, London.

TO CHEMISTS and DRUGGISTS.—Employment, temporary or permanent, wanted, by a gentleman of great experience. "Verum," 2 Ennerdale Villas, East End, Finchley, London, N.

AS ASSISTANT or Manager; experienced; disengaged; permanency preferred; able to extract teeth. "Alpha," 12 Romney Place, Maidstone, Kent.

A GENTLEMAN, Travelling on Commission, calling on Patent Medicine Vendors and Chemists in town, is desirous of adding other Agencies. H., 51 Gray's Inn Road, London.

TEMPORARY ASSISTANT, or Manager by the day or week; town or country; aged 47; of active business habits, and first-class testimonials. "Locum Teuens," 35 Bartrip Street, Hackney Wick, London.

IN WHOLESALE or Manufacturing; Minor qualification; London preferred; accustomed to Wholesale. "Minor," 52 Trafalgar Square, Scarborough.

OUTDOOR.—As Assistant, Dispenser, or Traveller; aged 27; 13 years' varied experience; qualifications and testimonials on application to "Registered Dentist," 18 Lambeth Road, London, S.E.

MANAGER, Working Partner, or Manager of Branch, with view to Succession; accustomed to good-class dispensing business. "Alpha," 71 Cambridge Street, Finsley, London.

AS ASSISTANT; accustomed to General country trade; aged 22; first-class references. Address, stating particulars of duties, &c., J. Hirst, Shaftesbury Crescent, Osmaston Road, Derby.

AS JUNIOR ASSISTANT in good Dispensing Business; Minor qualification; aged 23; London preferred; salary not so much an object as a good situation. Address, T. H. S., 24 Mowbray Terrace, Thirsk, Yorkshire.

A FRENCH PHARMACIEN, of great experience, thoroughly accustomed to foreign trade, wishes to find immediately either a Situation in an English house, or a Partner, to establish an Anglo-French Pharmacy in a first-class unoccupied position in the South of France. Address, Mr. Vial, Pharmaciens, Poste-restante, Nice, France.

WANTED, by an active Young Man, a Situation in a good country trade, or wholesale or manufacturing house; has had 6 years' experience in a first-class country family and agricultural business, and is also used to cellar management in the wine, spirit, and ale trade; writes a neat hand, and is accurate in accounts. Apply, B. N., Office of THE CHEMIST AND DRUGGIST, 44A Cannon Street.

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MR. HINE GILBERT

May be consulted every morning, from 10 to 2 o'clock, on all matters of Sale, Purchase, or Valuation, and now submits:—

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NOTICE OF REMOVAL.

T. O. SANDELL having removed his

HAIR RESTORER MANUFACTORY

FROM
YEOVIL, SOMERSET,
TO
KEANE TERRACE, WEST KENSINGTON,
LONDON,

Desires to take this opportunity of thanking his numerous customers for their kind confidence and support, and trusts they will continue to favour him with their further orders, which shall at all times have his prompt attention.

CAUTION.

GUM EXTRACT,

FOR producing a permanent head of creamy richness on Ginger Beer, Ginger Ale, Lemonade, and other aerated beverages; also on Beers, Ciders, Wines, &c.—To Makers and Vendors of Effervescent Drinks, and to the public generally.—Messrs. W. J. BUSH & CO., of Artillery Lane, Bishopsgate, London, Manufacturing Chemists, hereby give notice, that they are sole proprietors of the patent for making the above Gum Extract, and of the recipe from which and the process by which the said extract is prepared. Messrs. W. J. BUSH & Co. hereby caution all persons against making the said Gum Extract or any imitation thereof. And they also caution all persons from selling or using the said Gum Extract or any imitation thereof other than that made or supplied by them or their authorised agents. All persons infringing the above patent will be immediately proceeded against. The only genuine Gum Extract is that prepared by Messrs. W. J. BUSH & Co., 20 to 23 Artillery Lane, Bishopsgate, London, and the Works, Ash Grove, Hackney, and sold in bottles and in tins, price 2s. 6d. per lb., bearing their labels, and issued from their warehouses.—WILSON, BRISTOW & CARPMAIL, Solicitors, Copthall Buildings, E.C.

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The tendency to decomposition exhibited by the majority of the Chemical Syrups, and the difficulties attending their manufacture on a small scale, are well known. These objections may be entirely overcome by the use of the above Concentrated Liquors. The solutions are of uniform strength, are unalterable in appearance, and will produce in a few moments large or small quantities of any required Syrup.

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Liquor Ferri Phosph.; Liq. Calcis Lactophosph.; Liq. Ferri et Calcis Hypophosph.; Liq. Ferri et Manganes. Phosph., &c.

The above are supplied in 4 oz., 8 oz., 1 lb., and 7 lb. bottles, each bearing our Name on the label, and our Trade Mark (Ithuriel's spear) on the band over the stopper, and may be obtained through any Wholesale House.

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The above quality has never before been offered in the English market. Its immense sale has heretofore been confined to America and West Indies. It is offered with the positive assurance that it is unequalled, and a successful rival with all other fine Toilet Waters.

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Never fails to restore Grey Hair to its youthful colour, imparting to it new life, growth, and lustrous beauty. Its action is certain and thorough, quickly banishing greyness. It is not a Dye. It ever proves itself the natural strengthener of the Hair. Its Superiority and Excellence are established.

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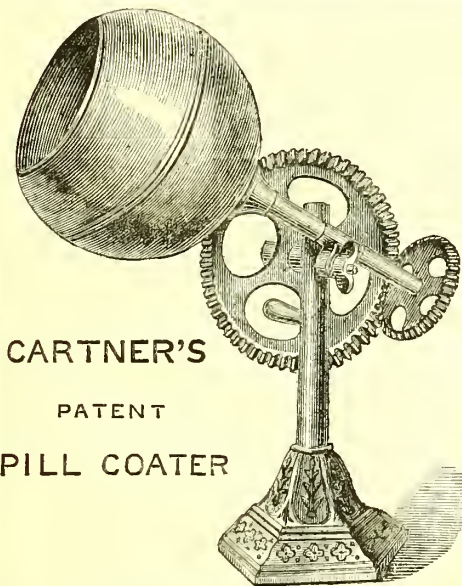
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| | No. 5 " " 12 lb... | .. | .. | £5 5s. |

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JOSEPH H. BOLTON.

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RALPH HALL.

ANOTHER WRITES:—I cannot understand anyone not succeeding with your "PATENT PILL COATER." I put the Pills into the cylinder and revolve; whilst revolving I sprinkle them with gum water, and keep revolving for a couple of minutes, in order that all the pills may be slightly moistened all over; I then add the chalk, and still continue revolving until the pills are dry; repeating this as often as necessary, twice or thrice at the outside; and my pills are equal to those of any manufacturer.

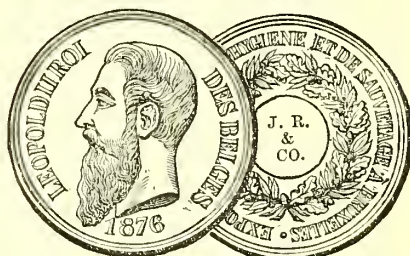
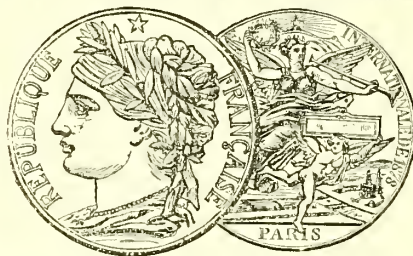
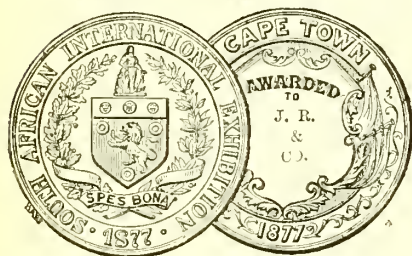
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Under the direct Patronage of
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THE ONLY "GOLD MEDAL" PEARL-COATED PILLS.



JOHN RICHARDSON & CO.'S SOLUBLE PEARL-COATED PILLS.

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The distinctive peculiarities of JOHN RICHARDSON & Co.'s SOLUBLE PEARL-COATED PILLS are as follows:—

1. The coating is applied without the aid of resin, tolu, or any preparation which is insoluble in water,—hence their perfect and speedy solubility.
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These advantages, combined with the absolute purity of the drugs used, the scrupulous care exercised in their manufacture, together with their elegant and superior appearance, have caused them to become **THE MOST POPULAR COATED PILLS IN THE MARKET**, and have gained the distinction of

THREE PRIZE MEDALS—

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Together with the still more valuable commendations of a large number of Medical Practitioners and Chemists in England, Scotland, Ireland, and the leading Capitals of the World.

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We have prepared, at the request of several eminent practitioners, the following new and valuable remedies suggested by Dr. WILLIAM RUTHERFORD, F.R.S., as Hepatic Stimulants. See "Report on the Biliary Secretion of the Dog, with reference to the Chologogues. By W. Rutherford, Esq., M.D., F.R.S., Edinburgh."—BRITISH MEDICAL JOURNAL, February 8, 1879.

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| 607. Euonymin, gr. j. ... | 9 0 | 613. Phytolaccin, gr. $\frac{1}{4}$... | 2 3 |
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PROPER COMPOSITION.

In contradiction to the extraordinary statement made by Mr. Condry that "GENUINE CONDY'S FLUID IS NOT AND NEVER WAS COMPOSED OF PERMANGANATE OF POTASH," The Condry's Fluid Co. insist that Genuine Condry's Fluid (Crimson) IS and SHOULD BE composed of Pure Permanganate of Potash, in accordance with the Patent Specification and the principal Medical and Chemical authorities, as well as with the declarations of composition issued by the late Bollmann Condry partnership firm, wherein the description ran as follows:—"Condry's Fluid (Permanganate of Potash) . . . Permanganate of Potash (Condry's Fluid) . . . H. B. Condry."

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THE CONDY'S FLUID CO., FALCON STREET, E.C., maintain the following Reductions in the Trade Prices of their genuine articles, which can always be relied upon as being of full strength and perfect purity:—

CONDY'S PATENT FLUID (Crimson), 1s. size, 6s. per doz.; 2s. size, 12s. per doz.; 4s. size, 24s. per doz.

CONDY'S PATENT OZONISED WATER, 2s. size, 12s. per doz.; 3s. 6d. size, 20s. per doz.

CONDY'S PATENT FLUID (Green), CONDY'S REMEDIAL FLUID, CONDY'S HEALTH POWDER, CONCENTRATED VINEGAR, &c., as before.

LIBERAL TERMS TO WHOLESALE AND EXPORT BUYERS.

N.B.—In ordering through the Trade, please NOTE THE ADDRESS, FALCON ST., and specify our articles at REDUCED TRADE PRICES, which are listed by all Wholesale Houses less their usual discounts. THEY ARE MADE IN STRICT ACCORDANCE WITH THE PATENT, ARE UNIFORMLY UP TO STRENGTH, free from impurities and sediment, securely corked, and always give satisfaction alike to consumer and to dealer. THEY ARE GUARANTEED BY THE ORIGINAL LABELS OF THE LATE FIRM WITH PRIZE MEDALS AWARDED AT INTERNATIONAL EXHIBITIONS, the unwarranted use of which is a misdemeanor, and the right to which is confirmed to the Company by Decree.

THE CONDY'S FLUID Co., FALCON ST., E.C.

A. D. MITCHELL, Managing Partner.

N.B.—ASK FOR THE LABEL WITH ALL PRIZE MEDALS, AND SEE THAT YOU GET IT.

THE CONDY'S FLUID CASE.

FINAL DEFEAT of MR. H. BOLLMANN CONDY.

FAILURE AND EXPOSURE OF THE "TRAP TO CATCH CHEMISTS."

CONDY v. MITCHELL.

COURT OF APPEAL, LINCOLN'S INN, Nov. 27, 1877.

LORD JUSTICE JAMES (without needing to hear defendant's counsel) said—That such a suit should have been instituted at all was very remarkable; but that, after the learned Vice-Chancellor's judgment, this appeal should have been brought on was particularly strange. Dr. Mitchell had obtained his right by payment of a substantial money consideration, and CONDY'S FLUID AND CONDY'S OZONISED WATER WERE AS MUCH HIS PROPERTY AS THE PLAINTIFF'S. Having that right, Dr. Mitchell was entitled to set up the Condry's Fluid Company.

LORD JUSTICE BAGGALLAY was of the same opinion. The style of the partnership had been "Bollmann Condry & Co.," and the plaintiff set up in his own name of "H. Bollmann Condry." It was not necessary to consider whether he might have been restrained from so doing; but he came into court with a very bad grace. To get evidence HE HAD RESORTED TO WHAT WAS, IN FACT, A TRAP TO CATCH CHEMISTS.

LORD JUSTICE THESIGER was also of that opinion; and especially as to the character of the plaintiff's evidence. A good deal of it seemed to him not admissible at all.

LORD JUSTICE JAMES: APPEAL DISMISSED WITH COSTS.

ANILINE COLOURS FREE FROM ARSENIC.

We beg to introduce to the notice of the Trade a Series of ANILINE COLOURS **FREE FROM ARSENIC**, which we venture to think will be of considerable service.

NO ARSENIC ACID WHATEVER is used in the manufacture of these Colours, and we can confidently recommend them for the use of Confectioners and others who find the presence of small quantities of Arsenic to be deleterious.

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JAMES LYNE HANCOCK,

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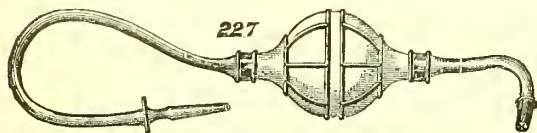


ESTABLISHED 1833.

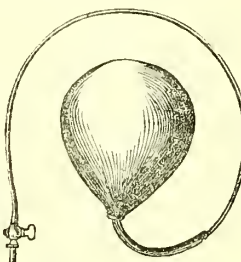
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WORKS—Goswell Mews and Charles Street, City Road,
WAREHOUSE—Offices and Postal Address, 266 Goswell Road,
LONDON, E.C.

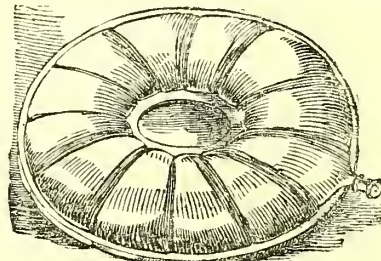
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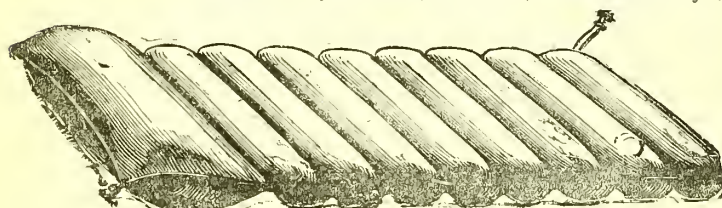


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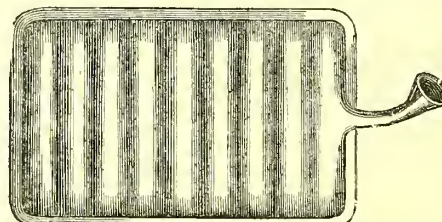


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Portable Inflating Baths.
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Waterproof Bed Sheeting.
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Lawn Tennis Balls, Plain and
Covered, regulation size.

The above kept in stock, and made to order. Special Orders for Invalids, &c., made on shortest notice.

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All Orders to be addressed to the Warehouse and Factory—266 GOSWELL ROAD, LONDON, E.C.

GENUINE CONDY'S FLUID

Is not and never was composed of Permanganate of Potash.

SUPREME COURT OF JUDICATURE.—CONDY v. MITCHELL.

Extract from the DAILY TELEGRAPH, Nov. 28th, 1877:—"Evidence was adduced in support of the Plaintiff's case for the purpose of showing that people had been actually deceived. It was further alleged that, while the Plaintiff's Fluids were made from Permanganates of Soda and Lime, both expensive and special products, the Defendants' were obtained from Permanganate of Potash, a cheap and objectionable article, common in the market."

SUPREME COURT OF JUDICATURE.—CONDY v. MITCHELL.

Extract from the STANDARD, Nov. 28th, 1877:—"This was an appeal by Mr. H. B. CONDY, the inventor of Condy's Fluid. The suit had been brought to restrain the Defendant from selling Condy's Fluid, and, by adopting the name 'Condy's Fluid Company,' inducing people to believe that what the Company sold was actually manufactured by Mr. CONDY. It was further asserted that the article sold by the Company was inferior to that manufactured by Mr. CONDY."

No Prize Medals were awarded at any Exhibition for spurious imitations of my articles. The only Medals given were awarded to me personally. These are now and always have been in my possession.

CAUTION!!!—Genuine Condy's Fluid and Condy's Ozonised Water bear the facsimile signature of the Inventor and address, as under:—

H. Bollmann Condy

INVENTOR, PATENTEE, AND MANUFACTURER, BATTERSEA, LONDON, S.W.

Chemists should not allow spurious imitations of these articles, differing in composition and strength from the genuine, to be passed off upon them under cover of my name.



Prices in bottles—1s. size, 9s. per dozen; 2s. size, 14s. per dozen; 3s. size, 28s. per dozen. In tin boxes, 3s. 6d. size, 2s. 8d. each; 7s. size, 5s. 4d. each—less usual trade discounts.

Special terms for large quantities on application.

CONDY'S OZONISED SEA SALT, PATENTED, FOR BATHS.

Combines the effects of Sea Water, Mountain Air, and Mineral Water. Invigorates the body, strengthens the nerves, and relieves rheumatic and other pains. Dissolves instantly in water.

Spurious imitations of Condy's Fluid and Ozonised Water are being sold at all kinds of prices, varying from 4s. per dozen for 1s. red to 6s. per dozen. None of these are of proper composition and strength, and the public usually detect the fraud.

Some unscrupulous Wholesale Houses endeavour to pass off one or other of these imitations for the sake of extra profit. Chemists should be careful they are not imposed on by substitution of any such articles, and should look for my signature as above.



TRADE MARK.

TRUSSES



TRADE MARK.

LYNCH & CO.

Have devoted particular care and attention to the manufacture of **TRUSSES** and other Instruments for the cure and alleviation of diseases and deformities. Every article is manufactured by skilled workmen, under the direction of an experienced foreman. L. & Co. can, therefore, with confidence guarantee each article bearing their name as the best of its respective kind.

Competent Assistants are employed, so that patients can be measured and fitted on the premises, or at their own homes, without any risk or annoyance to the Chemists.

LYNCH & CO. have introduced a new **TRUSS**, by which the pressure of the Pad on the Hernia can be *increased* or *lessened* at pleasure, and *the angle of the Pad with the spring can be altered*, so as to adapt the Instrument to the shape of the body and the situation of the Hernia.

The following are prices of Trusses in most general use:—

| | | Single. | Double. |
|---|----------|------------------------|------------|
| LYNCH'S ADAPTABLE TRUSS, by which the pressure can be increased or lessened, and the angle of the Pad altered ... | | £0 12 6 | £1 5 0 |
| FOR FEMORAL HERNIA— | | | |
| Circular Springs | per doz. | 1 4 0 | 2 0 0 |
| Ditto, with Narrow Springs, of superior make, very light and durable | per doz. | 3 0 0 | — |
| FOR INGUINAL HERNIA— | | | |
| Circular Springs, covered with basil and chamois, ordinary quality | per doz. | 1 1 0 | 1 14 0 |
| Ditto, covered with calf | " | 1 16 0 | 2 12 0 |
| Ditto, covered with morocco | " | 1 16 0 | 2 8 0 |
| Ditto, with Sliding Backs | " | — | 3 3 0 |
| Ditto, on Cole's principle | each | 0 5 6 | 0 10 6 |
| Ditto, Moc Main Lever | " | 0 8 0 | 0 13 6 |
| Ditto, on Salmon & Ody's principle | per doz. | 1 16 0 | 3 12 0 |
| Ditto, ditto, very superior finish | " | 2 10 0 | 5 10 0 |
| FOR PROLAPSUS ANI | each | 1 0 0 | and 1 10 0 |
| FOR PROLAPSUS UTERI | " | 0 17 6 | and 1 10 0 |
| Ditto, Hull's principle, with Lynch's improvement | " | 15/-, 21/-, and 1 10 0 | |
| FOR SCROTAL HERNIA | per doz. | 2 8 0 | 4 4 0 |
| FOR UMBILICAL HERNIA, on Cole's principle | each | 9/6, 12/6, and 17/6 | |
| Ditto, on Salmon & Ody's principle | " | 7/6, 9/6, and 12/6 | |
| Ditto, plain | " | 8/6 | |

Sizes 10 in. to 14 in. kept in Stock; large sizes made specially to order, with extra charge, according to size.

USUAL TERMS.

LYNCH'S IMPROVED BELT,

With Regulating Straps, by which the weight of the Abdominal Viscera is supported, and immediate relief given in cases of pendulous abdomen.

SUPERIOR ELASTIC STOCKINGS,

UMBILICAL BELTS, Instruments for every description of deformity, &c.

LYNCH'S "TEARABLE" LINT,

In 1-lb. Rolls, 1s. 8d. per lb.

Discount—10 per cent. Monthly, 5 per cent. Half-yearly.

LYNCH & CO., 171a & 171b Aldersgate Street, LONDON.

A DESIDERATUM SUPPLIED!

NOTICE TO THE TRADE.

By the introduction of **WENHAM'S LIME JUICE SALINE** to the notice of their Customers (which from its unique and attractive appearance it itself effects when displayed upon the counter), Chemists have the opportunity of considerably augmenting their returns by the sale of this entirely novel and elegant preparation, which—to enumerate some of its advantages—

Possesses in a complete and portable form the valuable anti-scorbutic, alterative, and general healthful properties of Lime Juice and Potash;

Rendering it in the highest degree a remedy at once palatable, refreshing, and health-sustaining;

Which, with a total absence of qualities whereby its range of usefulness can be limited, as in the case of purgative and obviously weakening Tartrates of Soda, &c.

Supply important desiderata that, considered in connection with the unapproached intrinsic value of the article.

Amply warrants the assumption of its obtaining the decided approval of the Public wherever introduced.

"33 Baker St., W."
"July 9th, 1878.

"Dear Sirs,
"I think your Effervescent Lime Juice Saline is well made, and should become very popular as a contribution to 'Elegant Pharmacy,' as well as a cooling beverage during the heat of summer.
"Yours faithfully,
"A. W. POSTANS,
"F.C.S."

"Aylesbury Pharmacy,
"11th Nov., 1878.
"Messrs. Wheeler & Co.,
"I sold out of your L. J. Saline on Monday last, and have got in a fresh supply, which makes my third case.
"I lately recommended it to a gentleman who was so especially pleased with it that upon the occasion of his purchasing a second bottle he assured me that he should never so pains to make known its virtues amongst his numerous friends.
"From the trial, therefore, which I myself have made, and the testimony I have received from my customers, I can confidently affirm it to be the best preparation before the public of the trade.
"I am, Gentlemen,
"Yours faithfully,
"JOHN TURNER."

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"JOHN TURNER."

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"JOHN TURNER."

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"Yours faithfully,
"JOHN TURNER."

IMPORTANT TO SHIPPERS.

LIME JUICE SALINE has most successfully been introduced with a view to obviate the difficulty of obtaining really reliable Lime Juice under any but exceptional circumstances. In the condensed form, now for the first time presented to the public, the difficulties attendant upon its use and transport in the liquid condition are wholly obviated; and by a combination of the most researched qualities, together with an entire freedom from the lowering effects of ordinary saline compounds, a remedy is provided which requires but a single trial to offer the most convincing proofs of its immense usefulness.

"21 Eccleston Square,
S.W."
"Sept. 12th, 1878.

"Gentlemen,
"Should Lime Juice be proved to be an efficacious remedy for scurvy, the palatability and 'readiness for use' of your preparation will render it invaluable in all future Arctic Expeditions.

"I am, Gentlemen,
"Very truly yours,
"A. H. MARKHAM,
"Captain, R.N."
Captain A. H. Markham was Commander of H.M.S. *Discovery* in the recent Arctic Expedition.

"Troop Steamer,
Dublin Castle,
"Cape Town,
"March 15th, 1879.

"Dear Sirs,
"In the hurry of embarkation, on 19th of last month, at Gravesend, I had not time to thank you for the box of Effervescent Lime Juice Saline you so kindly placed at my disposal, for use of officers and men embarked for the Cape. I now do so, and can testify to its having proved a boon to those who felt in any way indisposed, especially to those suffering from sea-sickness. The demand for it was so great that your liberal supply soon vanished. I can safely say, from personal experience during the voyage, that it is not only most refreshing, but also tends to allay sea-sickness, and I am sure would be also useful in febrile diseases. Accept my thanks, please.
(Signed)
"EDW. J. BOULTON,
"Surgeon-Major."

"Royal Hotel,
Durban, Natal,
"March 20th, 1879.

"Gentlemen,—
"I intended posting you this when at Cape Town, but we were so suddenly ordered on here that I had not the opportunity of doing so until we reached Durban.
"I am greatly indebted to you for many a refreshing draught during the voyage; indeed the Lime Juice Saline was so popular with all ranks and classes on board that a considerable sum could have been realised by its sale on board the *Dublin Castle*, and I only regret that it is not to be procured here, as I should be very glad to possess a supply on my departure to-morrow to join Col. Wood's column.
(Signed)
"WM. SMITH COX,
"Captain H.M. Ordnance."

In Bottles, 2s. 6d. and 4s. 6d. each; Cases for Export, 21s. Sole Manufacturers (Registered),
WHEELER & CO., LONDON AND SOUTHEAST-ON-SEA.

AGENTS.—Calcutta, Messrs. Bathgate & Co.; Bombay, Messrs. Treacher & Co.; Simla and Lahore, Messrs. E. Plomer & Co.; Allahabad, Mr. J. L. Lyell; Shanghai, Messrs. J. Llewellyn & Co.; Melbourne and Wellington, Messrs. Felton, Grimwade & Co.; Sydney and Brisbane, Messrs. Elliott Bros.; Dunedin, Auckland, and Christchurch, Messrs. Kempthorne, Prosser & Co.; Port Elizabeth, Messrs. N. Adler & Co.

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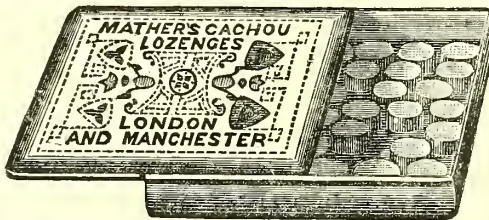
THE BEST, CHEAPEST, AND MOST SALEABLE NOVELTY OF THE YEAR.

MATHER'S CACHOU LOZENGES,

IT PATENT METAL SLIDE BOXES.

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PER GROSS,

SUBJECT TO USUAL
DISCOUNT.



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Special Quotations on application for Large Buyers and for Export.

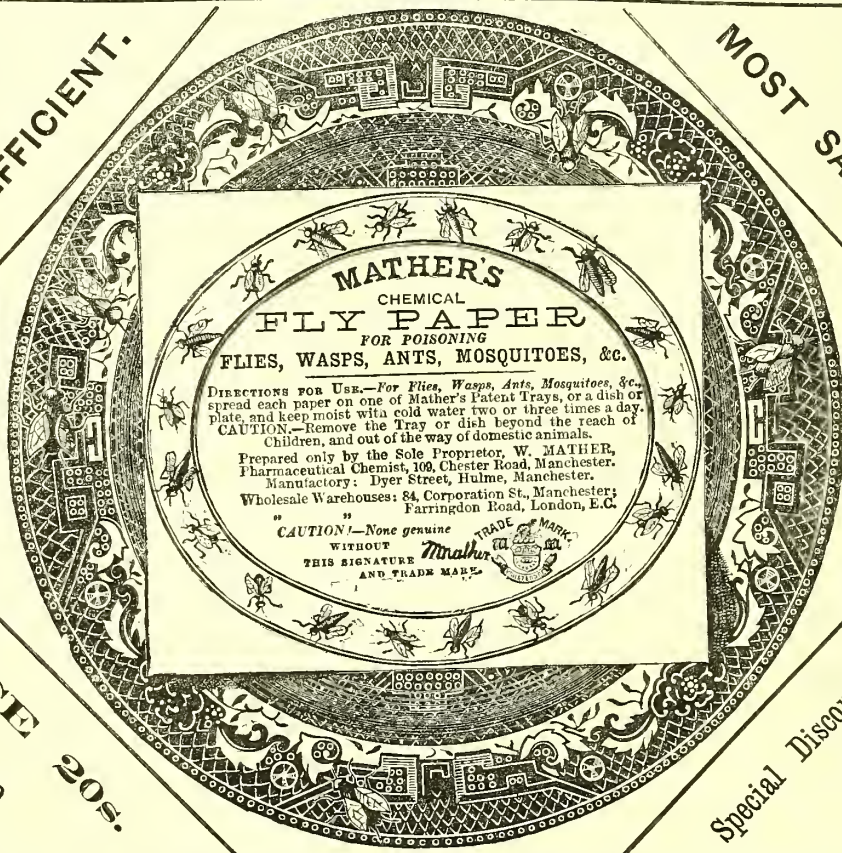
A Customer writes: "I must congratulate you on sending out the neatest and cheapest pennyworth I ever saw. Send me two gross more of your Cachous; though only opened late last night, nearly the whole of the box sent have been disposed of."

THE
MOST EFFICIENT.

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MOST SALEABLE.

PRICE 20s.
Per 1,000.

Special Discount to Large
Buyers.



WILLIAM MATHER,
FARRINGTON ROAD, LONDON; 84 CORPORATION STREET, MANCHESTER.

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August 15, 1879.

SCALE OF CHARGES FOR ADVERTISEMENTS.

Whole Page, £5. Half Page, £2 15s. Third Page, £2. Quarter Page, £1 12s. Sixth Page, £1 5s. Eighth Page, 18s.

Special Rates for Wrapper and pages preceding and following Literary matter, also pages facing inside of Wrapper. The above Scale of Charges will be subject to a discount of 10 per cent. upon 7 and 20 per cent. upon 13 insertions, prompt quarterly payments.

N.B.—An order for 13 insertions means 12 in the CHEMIST AND DRUGGIST and 1 in the CHEMISTS' AND DRUGGISTS' DIARY. The same rule also applies to an order for 7 insertions, or to an order for insertion until countermanded, if such order is in force in October of any year.

All Advertisements intended for insertion in the current Month must be sent to the PUBLISHER of the CHEMIST AND DRUGGIST on or before the 12th, except Employers' and Assistants' Advertisements, which can be received up to 10 A.M. on the morning previous to publication.

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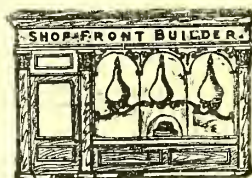
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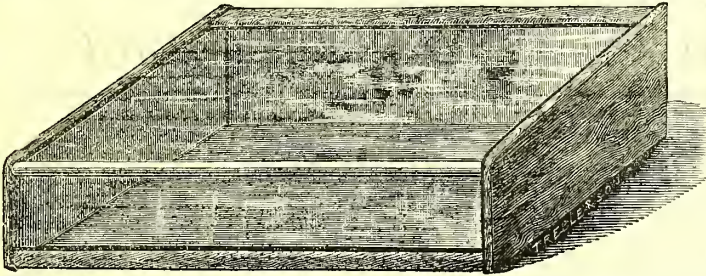
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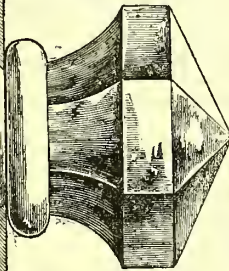
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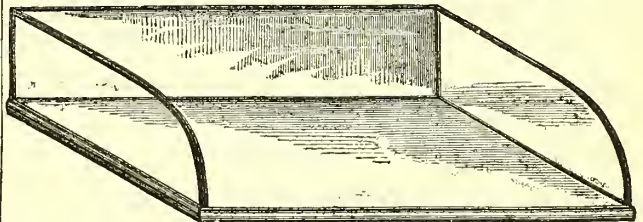
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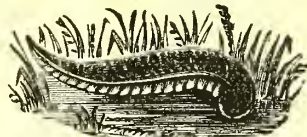
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| 10 | " | Common | " | ... | " | 1 18 0 | 18 |
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Is a great improvement upon the "DENTAL SYRINGE," as the fluid is contained in a glass bulb, which enables its contents to be seen, also prevents the liability to evaporation through long keeping or exposure.

THE UNIVERSAL CORN AND WART PENCIL.

1 doz. mounted on a handsome Illustrated Show-Card, Retail, 6d. each; Wholesale, 3s. 6d. per doz.

It is especially adapted for Export Trade, and may be safely sent to the hottest climates, as each glass tube is hermetically sealed and enclosed in a cardboard case.

N.B.—Both the above are exempt from Stamp Duty by permission of the Board of Inland Revenue.

"The EMPRESS of INDIA'S BOUQUET"

(Registered under the new Trade Marks Act),

A DELIGHTFUL, REFRESHING, AND FASHIONABLE PERFUME.

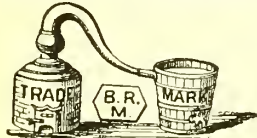
"Chemists may gratify their loyalty to their hearts' content by selling a perfume just introduced by Mr. B. Robinson, of Pendleton, Manchester, called 'The Empress of India's Bouquet.' The perfume is remarkably cheap, and is by no means lacking in richness. The shilling bottles are good sized ones, corked with the patent sprinklers, and decorated with a faithful likeness of the Empress alluded to."—Editor of *The Chemist and Druggist*, November 15th, 1876.

Sold in Bottles, at 1s. each, or Treble Size, 2s. 6d.; Wholesale, 8s. per dozen in 1-dozen cases, and 20s. per dozen in ½-dozen cases.

Prepared only by B. ROBINSON, Operative Chemist and Distiller, PENDLETON, MANCHESTER.

CONCENTRATED WATERS.—One Ounce of these Waters added to Forty Ounces of Distilled Water forms a clear Medicated Water (without filtering), similar in every respect to those prepared according to the directions of the British Pharmacopœia, and free from all Chemical impurity. They are prepared to supply a want long felt by Chemists and Medical Men, and by their use a fresh supply of any of the Medicinal Waters may be obtained at a moment's notice. They are not affected by age in any climate.

N.B.—Used in the proportion of one part to thirty-two of water they represent the Medicinal Waters of the United States Pharmacopœia.



| | Per lb. | | Per lb. | | Per lb. | | Per lb. |
|-----------------------|---------|----------------------------|---------|-------------------------|---------|------------------------|---------|
| Aqua Anethi, Concent. | 4/0 | Aqua Cinnam, Ver. Concent. | 6/0 | Aqua Fœniculi, Concent. | 4/0 | Aqua Pimentæ, Concent. | 4/0 |
| " Anisi, " | 4/0 | " Cassiæ " | 4/0 | " Menth Pip. " | 4/0 | " Rosæ " | 8/6 |
| " Camphoræ " | 4/0 | " Flor. Aurant " | 8/6 | " Ang. Con. " | 6/0 | " Rosæ Virgin " | 10/6 |
| " Carul " | 4/0 | " Flor. Sambuci " | 8/6 | " Virid. " | 4/0 | | |

The above are put up in Bottles of ¼lb. or 1lb. and upwards, each of which has the Inventor's Protection Label over cork.

Wholesale Agents—Hearon & Co., Maw, Son, & Thompson, Lynch & Co., London; Evans, Sons & Co., Raimes, Liverpool; Mather, Woolley, Manchester; Bewley & Draper, Dublin; Glasgow Apothecaries' Co., Hatrick & Co., Glasgow; Raimes & Co., Edinburgh; Foggitt, Tbirsk; Goodall & Co., Leeds; Clarke, Bleasdale & Co., York; McKesson & Robbins, New York. Special terms for large quantities may be had from

B. ROBINSON, Operative Chemist, Distiller and Brewer of British Wines, Manchester.

F. A. SARG'S SON & CO.'S CHEMICALLY PURE GLYCERINES AND TOILET GLYCERINE ARTICLES.

CHEMICALLY PURE GLYCERINES.

Sarg's Double Distilled Glycerine, Chemically Pure,

30° Beaumé, in Cases of Four 56-lb. Tins each; Twenty 5-lb. Bottles, Fifty 1-lb. Bottles, and 100 ½-lb. Bottles, with Registered Label.

Sarg's Double Distilled Glycerine, Chemically Pure,

In ½-lb. and 1-lb. Bottles, should have a place in every nursery on account of its salutary action on the heads of children, relieving them from dandruff and the roughness of the scalp they are so commonly subject to.

Sarg's Distilled Glycerine, Chemically Pure, P.B.,

29° Beaumé, in Cases of Four 56-lb. Tins each.

Crude Glycerine, in Bulk.

TOILET GLYCERINE ARTICLES.

Transparent Glycerine Soap,

In registered Packets of three Tablets, 1s. Warranted to contain 33% of the purest Glycerine. Also in round Tablets, three in a Box; and in oval Tablets in paper.

Liquid Glycerine Soap,

Best preventive against chapped hands, 1s., and unrivalled for imparting softness to them, and rendering them clean and white. See Testimonials of Professor J. von Liebig, Baron; and of Professor F. Wöhler.

Scented Glycerine,

In Bottles at various prices. Either pure or diluted with water, this Glycerine is very successfully used for softening the skin, preserving the complexion, and preventing the very unpleasant roughness of the skin in cold weather.

Glycerine Cream

Is quite unequalled for imparting a fresh and healthy colour to the lips and keeping them from chapping.

Sarg's new Carbolic Glycerine Soap,

In Boxes of three Tablets, is highly recommended as a most effective disinfectant.

Sold by all Wholesale Chemists and Druggists.

Sole Wholesale Agents for the United Kingdom:

SCHMEDES, ERBSLOH & CO. (IMPORTERS OF CHEMICALS AND DRUGS), 6 CASTLE STREET, FALCON SQUARE, LONDON, E.C.; AND MELBOURNE AUSTRALIA.



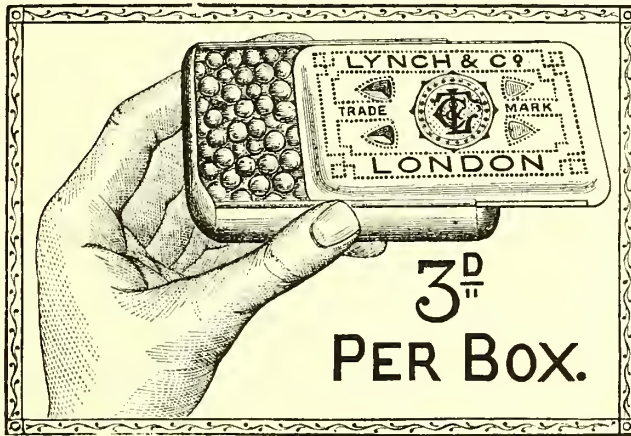
LYNCH'S



CACHOU AROMATISÉ

In Silvered
Slide Boxes.

For imparting
to
the breath a
delicious
fragrance.



In hinged
Boxes of One
Dozen.

Price per Doz.,
1s. 6d.,
Less usual Discount.

TOUGHENED GLASS MEASURES. (IMPROVED QUALITY.)

| | 2 dr. | ½ oz. | 1 oz. | 2 oz. | 3 oz. | 4 oz. | 6 oz. | 10 oz. | 20 oz. | 40 oz. | |
|----------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|---------------------------|
| CONICAL.....per doz. | 12/ | 10/ | 11/ | 12/ | 13/ | 14/ | 16/ | 22/ | — | — | } Subject to usual terms. |
| CYLINDRICAL .. | — | 8/ | 8/6 | 10/ | — | 11/ | 12/ | 14/ | 19/ | 34/ | |

E N E M A S.

LYNCH & CO. beg respectfully to draw the attention of the Trade to the following **REDUCED PRICES OF THEIR ENEMAS**, all of which they **WARRANT** to be of **BEST QUALITY** in their respective classes, and Solicit Orders:—

| | | |
|---------------------------|---|---------|
| 433a. HIGGINSON'S | Unvarnished India Rubber, with Rectum Pipe only, in Stout Hinged Cardboard Boxes | £ s. d. |
| | per dozen | 1 1 0 |
| 433b. DITTO | Ditto, with Elastic Gum Vagina Pipe and Leather Shield | 1 6 0 |
| 434. DITTO | Green, White, or Black India Rubber, with Bone Rectum Pipe, Elastic Gum Vagina Pipe to plug on, and Patent Leather Shield in Slide Cedar Boxes, per dozen | 1 14 0 |
| 434a. DITTO | Ditto, with Disconnecting Mounts | 1 16 0 |
| 437. "FAMILY" | Green, White, or Black India Rubber, with Bone Seat Pipe, Elastic Gum Vagina Pipe and Elastic Gum Child's Rectum Pipe, mounted with Bone Shield, all made to fit Screw Mounts, and with Patent Leather Shield in Slide Cedar Boxes, per dozen | 2 2 0 |
| 436. DITTO | Ditto, in Mahogany Boxes | 2 8 0 |
| 437b. "PERFECTION" | Green, White, or Black India Rubber, with Bone Seat Pipe, Elastic Gum Vagina Pipe and Elastic Gum Child's Rectum Pipe, mounted with Bone Shield, all made to fit Screw Mounts, and with Patent Leather Shields and Disconnecting Mounts, fitted with Thumb Pieces, in Slide Cedar Boxes | 2 8 0 |
| 437a. DITTO | Ditto, in Mahogany Boxes | 2 17 0 |
| 437c. DITTO | Ditto, in very superior Mahogany Boxes, with Lock and Key | 3 12 0 |

Less usual Discount. Special Quotation to Buyers of One Dozen and upwards.

Original and Sole Manufacturers,

LYNCH & CO., 171a & 171b Aldersgate St., LONDON, E.C.

COPYRIGHT—ORIGINAL—AND ONLY GENUINE

WHITAKER & GROSSMITH'S PURE WHITE GLYCERINE SOAP.

Richly perfumed, and guaranteed to contain the necessary quantity of GLYCERINE for effectually imparting to the SKIN the softening and healing properties for which it is so justly famed.

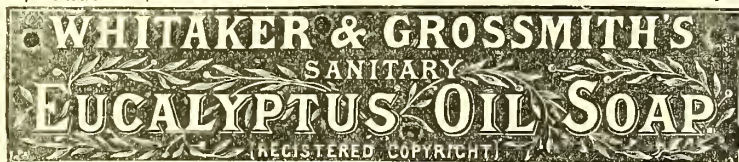
NECESSARY CAUTION.—This unrivalled Toilet Soap was originated by us in 1863, and solely by its superior merit and moderate price has now attained the patronage of a wide circle of all classes of society. As many (external) imitations of our saleable article are often falsely offered as the real Soap, all vendors should please note that the Box and Wrappers now bear our "Trade Mark," and not be misled by inferior counterfeits, thereby causing disappointment to purchasers, and consequent injury to the sale of the original and genuine Soap.

1s. 6d. Boxes of Three Tablets, 12s. per Dozen Boxes.

SELECT TOILET PREPARATIONS, extensively increasing in demand, which attests their excellent quality.

| TOILET SOAPS. Per doz. | | | BOUQUETS. Per doz. | | | POMADES, &c. Per doz. | | |
|------------------------|-----|------------------------|------------------------------|-----|---------------|--------------------------|-----|-----------|
| Cent-Fleur (copyright) | 2/6 | Boxes of 3 tablets 20/ | Cent-Fleur (copyright) | | | Cent-Fleur (copyright) | 8/ | 12/ & 20/ |
| Jockey Club | 1/6 | " 12/ | Star of India | ... | In Glass | Petroleum Pomade | ... | 12/ & 18/ |
| Musk Windsor | 1/6 | " 12/ | White Lilac | ... | Stoppered | Brilliantine | ... | 8/ |
| Sandringham | 1/6 | " 12/6 | Birthday | ... | or Sprinkling | Anglo Eau de Cologne | 8/ | 12/ & 20/ |
| Eucalyptus Oil | 1/6 | " 12/ | Hawthorn | ... | cap Bottles. | Eucalyptus Vinegar | ... | 12/ & 20/ |
| Semi-Cut Bars | 1/ | Bars of 6 kinds 8/6 | White Violet (and 50 others) | | | White Cherry Tooth Paste | 8/ | 12/ |

Highly recommended by the *Lancet*, *Sanitary Record*, and the *Medical Press* as an elegant Sanitary Toilet Soap for the Skin, with an aromatic disinfectant for the Apartment.



The Antiseptic properties of the *Eucalyptus Tree* are now fully retained by enclosing the Soap in tinfoil, and any of the old stock on hand will be exchanged for fresh free of cost.

The Standard says:—"As an antiseptic, *Eucalyptus Soap* has no rival."

1s. 6d. Boxes of Three Tablets. 12s. per Dozen Boxes.

Trade Price Lists sent and Orders executed through Wholesale Houses, or direct from the Manufacturers,

WHITAKER & GROSSMITH, Wholesale Perfumers, 120 Fore Street, City, London.

1/6 JUDSON'S 1/6 GOLD PAINT.

| | |
|----------------------|---|
| 1 Bottle Gold Powder | } 12s. per dozen sets. Six sets on a card, or each set in card box. |
| 1 " Mixing Liquid | |
| 1 Mixing Bowl | |
| 1 Brush | |
| 1 Bottle Gold Paint | } 10s. 6d. per doz. sets. Six sets on a card, or each set in card box. |
| 1 " Mixing Liquid | |

For regilding picture and glass frames.
For gilding lamp stands and gas-fittings.
For renewing ormolu ornaments.
For illuminating on paper, silk, or leather.
For artistic cabinet work.
And for a thousand useful and domestic purposes.

OLD BOOK COVERS, &c., MADE NEW.

MIRACILINE.

Original Patent Leather & Cloth Restorer.

MAKES OLD BINDINGS LOOK NEW.

Every person their own bookbinder. Full and simple directions.

MIRACILINE.

All who value their Books should try it. This will restore all Leather and Cloth on Books, Desks, Dressing Cases, Office and Library Tables, &c., as when new.

MIRACILINE.

Sold by all Stationers, Fancy Dealers, &c., throughout the United Kingdom, in 6d., 1s., and 2s. 6d. Bottles; or post free for 8, 13, or 20 stamps, from the Sole Proprietors—

BRIEN & CO., 53 TABERNACLE WALK, FINSBURY SQUARE, LONDON, E.C.
To be had Wholesale of Messrs. Mather & Son, Farringdon Road; Barclay & Sons, 95 Farringdon Street; Edwards, 157 Queen Victoria Street; Maw, Son & Thompson, 7 to 12 Aldersgate Street; Millard & Sons, 40 Charterhouse Square, E.C.; Sutton, Bow Church Yard; Sanger & Sons, 150 and 252 Oxford Street; and all Wholesale Houses.

AFTER READING THIS SEND FOR A BOTTLE.

The Old Style

**PLEASED BY
PATENT
MACHINERY.**

**SOLD BY ALL
DRUGGIST'S SUNDRIESMEN
& Manufactory,**

LONDON

**HUNT'S
PAPER
BOTTLE
CAPS.**

**THE
NEW**

3, 4 and 5 Little Windmill Street, Golden Square.

ESTABLISHED 100 YEARS.

TOILET AND FANCY SOAPS

OF EVERY DESCRIPTION.

CHOICE PERFUMES IN BULK.

No. 1 extra 12/ per pint of 20 ozs.
 No. 1 9/6 " " "
 No. 2 8/ " " "
Put up also in great variety of size, style, and price.

SOAPS.

Zinc, Sulphur, Petroleum, } 6d. & 1/
 Petrolin, Juniper Tar, & } 4/ & 8/
 other Medicated Soaps .. } doz.
 Glycerine Jelly, 6d. and 1/
 stoppered bots., 4/ & 8/
 per doz.

T. F. BRISTOW & CO.

MANUFACTURERS,
TOILET SOAPS & PERFUMERY.

PRICE LISTS
 ON APPLICATION.

BRISTOW'S SPECIALITIES.

Carbolic Acid Soap.... } In boxes 3 lbs.
 Glycerine and Carbolic Acid } 1/ & 1/
 Glycerine and Ointment Soap .. } 8/ & 12/ per dz.
 Baby Soap for Nursery use (In boxes 4 & 12 lbs.
 (Illustrated Label) 9/ and 27/ per doz.
 Family Soap, in boxes 4 & 12 lbs (1/ & 2/6) 8/ & 24/
 Cold Cream Soap, in boxes, 3 lbs. in box (1/6 & 2/6) 12/ & 21/
 Stockholm Tar Soap } in boxes, 3 tablets in box (1/6) 12/
 Pure Coal Tar Soap } in 4d., 6d. & 8d. lbs, in 3 doz. boxes, 2/6, 3/6, 4/6 doz.
 Transparent Soap, in boxes 3 tablets (1/ & 1/6) 8/ & 12/
 Superior Lavender Soap, in boxes, 3 tablets (1/ & 1/6) 8/ & 12/
 White Glycerine Soap, in boxes, 3 tablets (1/6) 12/
 Dog Soap (Ilust. Wrapper), Carpet & Cloth Soap, Pumice Stone Soap (6d. & 1/1) .. 3/6 & 7/ doz.

5 BISHOPSGATE AVENUE, LONDON.

Needham's

Polishing Paste,

For Cleaning Brass,
 Copper, and Britannia
 Metal Goods, &c.

Pickerings' Razor

Paste,

For sharpening Razors, &c.

Waterproof

Harness Blacking,

For Black Leather
 Harness.

Joseph Pickering & Sons (J. Needham), Albion Works, Sheffield,
 Late
 MANUFACTURERS OF



SOLD BY ALL CHEMISTS, GROCERS, IRONMONGERS, ETC.

Sheffield Knife

Powder,

For Table Knives, Fir
 Irons, &c.

Plate Powder,

For Electro-plated
 Articles, &c.

Furniture Polish,

For cleaning French
 Polished Furniture, &c.

Brunswick

Black,

For all kinds of
 Iron Work.

H. BESSEMER'S GOLD PAINT,

RETAIL PRICES:—

Small Bottles of Gold with Liquid 1s. 6d.
 Medium " " & Bowl & Brush 2s. 6d.
 Large Bottles of Gold 3s. 6d.
 " " Liquid 0s. 6d.

To be obtained of all Chemists, Artists' Colourmen, and
 Druggists' Sundriesmen.

NEW 1/6 & 2/6 PACKETS.

CONTENTS:—1 Bottle Gold Powder, 1 Bottle Mixing Liquid,
 1 Mixing Bowl, 1 Brush, in Cardboard Box.

Where the Bowl and Brush are not required, the u-nal 1/6 Packet should
 be purchased, as it contains a large quantity of both Gold and Liquid.

A COPPER AND SILVER PAINT, AT THE SAME PRICES, AND YIELDING EQUALLY
 GOOD RESULTS, CAN BE OBTAINED.

SOLE PROPRIETOR AND MANUFACTURER,

RICHARD J. ALLEN,
 MANSFIELD PLACE, KENTISH TOWN,
 LONDON, N.W.

If Translations are supplied, Circulars, Cards, or Labels will be printed in
 any language necessary for its sale.

Goddard's Plate Powder

For more than a Quarter of a Century this Powder has sustained an
 unrivalled reputation throughout the United Kingdom and the Colonies as
 the BEST and SAFEST article for Cleaning Plate.

Sold in Boxes, 1s., 2s. 6d., and 4s. 6d. each. Also

GODDARD'S FURNITURE CREAM. Sold in Bottles, 6d. and 1s. each.

Sold by leading Wholesale Houses and Factors, and by the Inventor,

J. GODDARD STATION STREET, LEICESTER.

BEST VEGETABLE PARCHMENT

For Covering Jars, Wrapping up Soap, Chemicals, Explosives, &c.

FANCY PAPER, TINFOIL, AND TINFOIL PAPER.

Samples and Prices post free on application.

E. BECKER & CO.,

30 Little Trinity Lane, Queen Victoria St., London, E.C.

FOR CLEANING PLATE.

BRADLEY & BOURDAS'S ALBATUM or WHITE ROUGE,

For Cleaning Gold, Silver, and Plated Goods.

Since its introduction as a substitute for the ordinary Rouge, a
 quarter of a century ago, the sale has amazingly increased
 both at home and abroad. A trial is only needed to prove its
 superiority over other plate powders in use. Sold in Boxes at
 1s. and 2s.; Tins, 6s. 7 Pont Street, Belgrave Square,
 and 48 Belgrave Road, London, S.W.


OKELL'S ORIGINAL MONABOUQUET

Retail, 1/1, 1/9, and 3/6; Wholesale, 9/1, 15/1, and 30/1 per doz.


This much-admired Perfume (prepared by the Widow of the late
 Joseph Okell), may be obtained from the leading Patent Medicine
 Houses, Wholesale Druggists, and Druggists' Sundry Dealers.

Applications for WHOLESALE Agencies to be made to the SOLE
 CONSIGNEE, **THOMAS WEST, Chemist, Stretford, Manchester.**

PHOENIX ESTABLISHED A.D. 1815 **MARKING INK**
GENUINE INDELIBLE
 THE LEADING & **STANDARD ARTICLE**
 PREPARED ONLY BY THE WIDOW OF THE LATE
JOHN MURPHY
 CHEMIST AT THE ORIGINAL ESTABLISHMENT
 11, NILE STREET, EAST ROAD, HOXTON, N.



MANUFACTURER OF INDELIBLE MARKING INK.
 TO HER MAJESTY'S ARMY CLOTHING DEPARTMENT.



THE ORIGINAL
 TRADE MARK.
 Estab^d 1815.

NO OTHER ADDRESS — BEWARE OF WORTHLESS IMITATIONS.

TRADE MARK. — **“COAGULINE.”** — TRADE MARK.
KAY'S New TRANSPARENT CEMENT FOR BROKEN ARTICLES.
 “Clear as crystal,” “stronger than glass,” “tough as leather.”
 6d., 1s., 2s., in boxes or on cards. Show cards, handbills with name, &c., Specimens, &c., for home or export, free.

KAY'S COMPOUND ESSENCE OF LINSEED, “The Stockport Remedy,” for Coughs and Colds. Cures nine cases out of ten. In bottles, 9d., 1s., 1 1/2d., 2s., 9d., 4s., 6d., &c. Sold by all Chemists.

LINSEED LOZENGES.—(Solidified Linseed Tea).—An agreeable sweetmeat, most demulcent and nourishing, which may be taken in any quantity by Children and Adults, for their soothing and beneficial effect. Packets, 6d.

CHLORO-LINSEED COUGH LOZENGES.—A medicated Linseed Extract, for out-door use, on leaving a heated room, &c. Demulcent, Expectorant, Warming and Soothing. Packets, 6d.

LINUM CATHARTICUM PILLS (of the Purging Linseed). Purely vegetable; the most wholesome aperient and corrective for young persons and adults. Boxes, 9d., 1s., 1 1/2d., 2s., 9d., of all Chemists.

KAY'S TIC PILLS.—A specific and pure nervous Tonic. The best form of administering the Quinine, Iron, and other Tonics of which they are largely composed. Boxes, 9d., 1s., 1 1/2d., 2s., 9d., of all Chemists.

STRAMONIUM CIGARETTES.—For Asthma. 2s. per dozen.

CUE CEMENT.—For Tipping Billiard Cues. 1s. and 2s.

For Circulars, Show Cards, Specimens, &c., address:—

KAY BROTHERS, Stockport.

Sold by all the Wholesale Druggists, Sundrymen, and Medicine Vendors.

EWENS' CLARIFIED LARD, MARROW, SUETS, AND OILS.

JAMES EWEN & Sons are induced to give further publicity to these articles, the continued demand by all who have used them being satisfactory proof “that where purity of basis” in ointments, &c., is required, they are most desirable.

By their method of purifying, the fats are not chemically altered, but simply divested of all particles tending to decomposition, they are consequently available for the most delicate preparations.

Adeps. Benz. B. P. and Pharm. Lard (*vide* P. J. Vol. I., No. 8). Direct, “for Cash only,” from

JAMES EWEN & SONS' CLARIFIED FAT WORKS,
 5 HATFIELD STREET, STAMFORD STREET, S.E.;

Or through any of the Wholesale Houses, with their usual credit, at a small advance.

CAUTION.—See that each package bears their label with name and weight.

RIMMEL'S NEW SANITARY APPLIANCES.

RIMMEL'S AROMATIC OZONIZER, a fragrant powder which, simply spread on a plate in apartments or places of public resort, evolves the refreshing and healthy emanations of the Pine and Eucalyptus, and produces a quantity of *Ozone*, the great air purifier. It is in use in the principal Hotels, Clubs, and Theatres, and also in the Saloons and Cabins of several Lines of Steamships. In 4 oz. tins, 1s.; by post for 15 stamps; 1 lb. tins, 3s. 6d.; Spreading Plate, 6d.

RIMMEL'S OZONIZED PERFUMERY.

DR. DAY, of Geelong, who has devoted much time and attention to sanitary questions, has discovered that alcoholic perfumes form excellent vehicles for diffusing ozone in the atmosphere and destroying noxious emanations and miasma. At his suggestion, E. Rimmel has prepared a series of Toilet Waters (Eau-de-Cologne, Lavender, and Florida), which are oxygenated by a chemical process, and evolve a quantity of *Ozone*. They are strongly recommended to be used on the handkerchief when attending crowded places, visiting the sick, or travelling by land or sea; also to be sprinkled on beds or carpets, or on a pad hung up in the air. Dr. Day writes to E. Rimmel (November 28, 1877):—“In manufacturing and making known the hygienic value of oxygenated perfumery you will be conferring a great benefit to the public, for it is the best means of disinfecting bedrooms, closets, &c.”

| | | |
|--|-------------------------------|---------|
| PRICES:—Rimmel's Ozonized Eau-de-Cologne | 4 oz. round bottles | 2s. 6d. |
| Rimmel's Ozonized Lavender Water | 8 do. do. | 5s. 0d. |
| Rimmel's Ozonized Florida Water | 16 do. do. | 9s. 0d. |

Sanitary Pads to be impregnated with the above and hung up in the air, 1s. The usual allowance to the Trade. Wholesale Lists on application to

EUGENE RIMMEL, Perfumer by Appointment to H.R.H. the Princess of Wales,
 96 STRAND LONDON.

WHITE AND SOUND TEETH.

JEWSBURY AND BROWN'S ORIENTAL TOOTH PASTE.

This old-established and increasingly favourite Dentifrice has been Forty Years before the Public. It is warranted to retain its properties and keep in good condition in any climate.

The original and only genuine is manufactured solely by

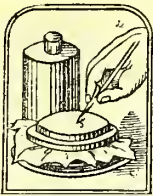
JEWSBURY and BROWN,
 CHEMISTS, MANCHESTER,

and is distinguishable by the Trade Mark, printed in red and green, a facsimile of which is annexed. Particular attention should be paid to this guarantee of genuineness, as numerous imitations are offered.

Sold universally by Chemists and Perfumers, at 1s. 6d. and 2s. 6d.

The Trade and Shippers supplied by the leading houses in London and elsewhere. Bills and Show Cards forwarded on receipt of address card, and directions for enclosure.



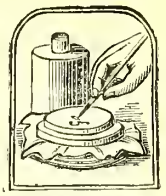


GREAT REDUCTION OF PRICES.

6d. and 1s. PEDESTALS, Glass Cases included.

20 per cent. off £100 Orders.

10 " " " £50 " "



CAUTION I AM DETERMINED TO PREVENT IN ALL CASES EVERY COLOURABLE IMITATION, TO PROTECT MY RIGHTS & PROPERTY.

WRIT OF INJUNCTION GRANTED NOV. 28, 1877.

WRIT OF INJUNCTION

COMMON PLEAS DIVISION,
JAN. 15.

(Sittings before Lord Coleridge and
Justices Grove and Denman.)

HICKISSON v. ASHTON.

Defendant moved for a NEW
TRIAL.

Application REFUSED.

This action, which was brought for
the alleged infringement of the Plain-
tiff's Trade Mark, was tried at the last
sittings at Guildhall, before Mr. Baron
Cleasby, when the verdict was for the
Plaintiff with damages.

The PLAINTIFF was the HUS-
BAND of the DAUGHTER of the late
JOHN BOND, the PROPRIETOR
of BOND'S CRYSTAL PALACE
MARKING INK. The Defendant
was a Druggist, and he had sold a
Marking Ink manufactured by a Mr.
Murphy, and the Plaintiff complained
that the Labels on Murphy's Ink were
an infringement on his Labels. A
TRADE MARK is not only a SYM-
BOL or CHARACTER, but the gene-
ral appearance of a label, whereby
the public would be deceived.

Their Lordships this morning, after
consulting Mr. Baron Cleasby on the
matter, refused the rule, that learned
judge having expressed his satisfaction
with the verdict.—RULE REFUSED.
Vide daily papers.

ANOTHER GOLD MEDAL AWARDED,

PARIS ACADEMIE,

For Merit and Superiority of Finish, 2nd Award.

PRIZE MEDAL, PARIS, 1878, 2ND AWARD.

3 Gold and several Silver and Bronze Medals.
Hon. Mention, Paris, 1878.

PRIZE MEDAL AND GRAND DIPLOMA,
8 Medals.] PHILADELPHIA EXHIBITION, 1876. [7 Diplomas.

PURVEYOR TO THE LORDS COMMISSIONERS OF THE ADMIRALTY.

CAUTION.—The only GOLD Medal Marking Ink. Gold
and Silver Medals and Diploma, Silver Medal and Diploma, London.
Prize Medal, Lyons, Certificate of Merit, signed Albert
Edward, Prince of Wales; and Dublin Diploma, Marking Ink
Maker under Royal Warrant to Her Majesty the Queen and
Court of Holland.

GOLD MEDAL, SOUTH AFRICA, 1877.

HONOURABLE MENTION and ESPECIAL NOTICE from
the FRENCH PRESIDENT and H.R.H. the PRINCE OF
WALES, Paris Exhibition, 1878.

HONOURABLE MENTION and DIPLOMA awarded by the
JURORS, 1878.

SECOND GOLD MEDAL awarded by the PARIS ACADEMY,
1878, for Merit and Superiority of Production.

J. HICKISSON, Proprietor of the Daughter of the late John Bond's
Crystal Palace Marking Ink, 75 Southgate Road, London,

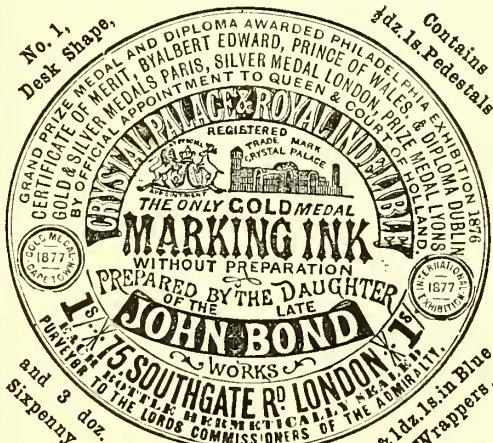
BOND'S MARKING INK.

CAUTION to Wholesale
and Retail Vendors.—TAKE
NOTICE that on Nov. 26th,
1877, IN AN ACTION
"HICKISSON & ANO-
THER against MURPHY"
JUDGMENT was given
for PLAINTIFFS, WITH
DAMAGES AND COSTS,
AND A PERPETUAL IN-
JUNCTION GRANTED
RESTRAINING the said
MRS. MURPHY and her
AGENTS FROM USING
the word "BOND" upon
any labels or pedestals
manufactured by or for her,
OR FROM IN ANY WAY
REPRESENTING THE
INK MANUFACTURED
BY HER TO BE BOND'S
MARKING INK.

GRANTED NOV. 28, 1877.

- 6d. Bottles in Round Blue Cases (Grand Show Card enclosed with each Packet of one dozen) ... 30s.
1s. Do. do. do. (Handsome Show Card enclosed with each dozen) ... 60s.
6d. Round Blue Wrapper upon Show Card of one dozen ... 30s.

FACSIMILE OF THE GENUINE LABEL.



Blue Wrappers. Black and White Oval Label.

DEAR HICKISSON, —
Send on receipt the £200
order, as we are much increas-
ing our trade by pushing your
Ink in place of useless
Novelties, as some other
Wholesale Houses are send-
ing other Makers', and there-
by the Retail are closing
their accounts. The 50 No. 1
Glass Cases are sold. Repeat
order immediate.—Yours,
BROWN & CO.

29/4/78.

No Heating Required
if allowed to remain
three hours previous to
Washing.

Where
are the Thousand
that have expended
and One would-be Makers
entirely lost large sums in trying
to oppose this old-established preparation?
Chemists, return all others forced
upon you, and do not offend
a Customer by sending
a would-be
substitute.

Have you seen the New
Black and Gold Glass Cases
with Hinged Black and Gold
Framed Linen Specimen of the
Crystal Palace with elaborate
GOLD Mounts?

No. 2 CASE, containing 3 doz. 1s., Crystal Palace and Royal Indelible, Blue Wrapper, Black and White Oval
Label, old style. 16s. each.

No. 3 CASE, containing 1 doz. 1s., Crystal Palace and Royal Indelible, Blue Wrapper, old style, and 2 doz.
6d., do. do. 11s. each.

No. 4 CASE, containing 3 doz. 6d., Crystal Palace and Royal Indelible, Blue Wrappers, Black and White Oval
Label, old style. 8s. 6d. each.

CAUTION I WILL PROSECUTE IN EVERY CASE OF MIS-
REPRESENTATION OR COLOURABLE IMITATION

G. SALTER & CO., WHOLESALE PERFUMERS

And FANCY BRUSH MANUFACTURERS,

Red Lion Square, London.

(ESTABLISHED 1830.)

X The best value given in Pomades, Lime Juice
and Glycerine, Indian Cream, French Extracts,
&c., &c.

Specialitie Triple Extracts, Gilt Sprinklers, or
Glass Stoppered Bottle, 1 oz., 12s.; 1½ oz., 17s.

AGENTS FOR

DR. STARTIN'S "MEDELA,"

OR ANTI-SCURF POMADE, 12s. dozen.

DR. LINCOLN'S HAIR RENEWER,

A NEW PREPARATION FOR RESTORING THE HAIR,
WELL GOT-UP,

In Two Bottles in One Case, 24s. dozen.

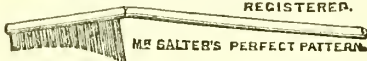
TINGO COMA,

THE BEST DYE IN THE MARKET,
20s. dozen.

A Sample Case of well-selected Perfumery, Pomades,
&c., sent to any address on receipt of P. Order for 25s

SOLE PROPRIETORS OF

REGISTERED.



DIRECT OR THROUGH ALL WHOLESALE HOUSES.

LUXURIANT HAIR.

PETROLINE

(REGISTERED)

HAIR CREAM

THE MOST POWERFUL OF HAIR PRODUCERS.

It causes the Hair to grow on Bald Spots, by nourishing and vitalising the capillaries, and is the *only* preparation which specially acts on the Roots of the Hair. It preserves and prevents the Hair from falling off, and removes dandruff; allays all irritating sensations, and imparts a richness, lustre, and softness unapproached by any other preparation. As a Hair Dresser, Preserver, and Producer it is unequalled. Retail price, 3s. 6d. per Bottle (cased). To the Trade, 27s. per dozen, less 10 per cent. Handsome Show Cards and Bills with each order.

DR. DELORME'S

AMA ROSA

(REGISTERED)

TOOTH PASTE

IN COLLAPSIBLE TUBES AND GLASS TOP BOXES.

The quantity contained in these Tubes is greater than a Pot of corresponding price. Retail, 6d. and 1s. each. Special quotation, 3s. 3d. and 6s. per dozen net. Cards and Bills with every package.

Sole Proprietors—NERWICH & CO.,
WYNNE ROAD, BRIXTON, LONDON, S.W.

The Proprietors are prepared to treat for spaces in Price Lists. Terms on application.

Erhardt & Co.

9, Bond Court, WALBROOK,
LONDON, E.C.

Manufacturers of * * * * *

Patent Parchment,

SOFT ELASTIC, White or Coloured, for tying
over Drugs, Preserves, &c., CAPPING and
CORKING Bottles of Chemicals, &c., &c.

White Split Skins,

Best quality only, for CAPPING Bottles,
from 6 to 20/- per doz. Also Coloured Skins.

Transparent Skins,

In different qualities, for CAPPING Bottles.

Tinfoil,

Chemically Pure, and Polished
made in any thickness from 15
to 90 square feet to the lb. Also Mixed
Foil, Coloured and Gold Foil, plain or embossed.

Metallic Capsules.

Also Tinfoil Papers, Gold, Silver, Fancy
or Capping Papers, as used by Chemists, &c., &c.
Capsuling Machines 35/- each.

Field & Tuer, 70, Leadenhall Press, London, E.C. 74, 763

THE BEST GOT UP AND MOST SALEABLE

SHILLING MARKING INK

IN THE TRADE.

It keeps its Colour and will not injure the most
delicate fabric.



No. 1.—PETERS' ARGENTUM, contains usual size Bottle of
Ink, Pen, and New Square Stretcher.—Price 1s.

No. 2.—PETERS' ARGENTUM, contains Larger Bottle of
Ink and Pen.—Price 1s.

No. 3.—PETERS' ARGENTUM, contains Bottle of Ink, equal
to 12 of No. 1, or 8 of No. 2.—Price 5s. per case.

SOLE PROPRIETOR AND MANUFACTURER—

R. W. WATSON, Chemist,
22 ANGEL STREET,
SHEFFIELD.

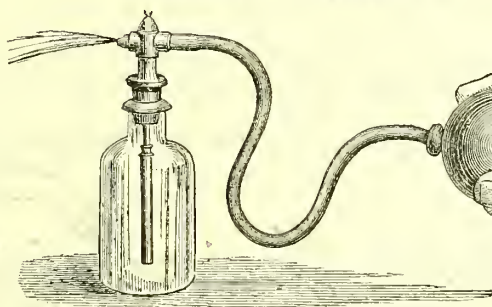
MAW'S A1 ODORATOR,

WITH REGISTERED TELESCOPE TUBE,
For Perfuming Apartments or Diffusing Disinfectants.

WITH ELASTIC TUBE.

NICKEL
PLATED,
30s.

PER DOZ.



SILVER
PLATED,
34s.

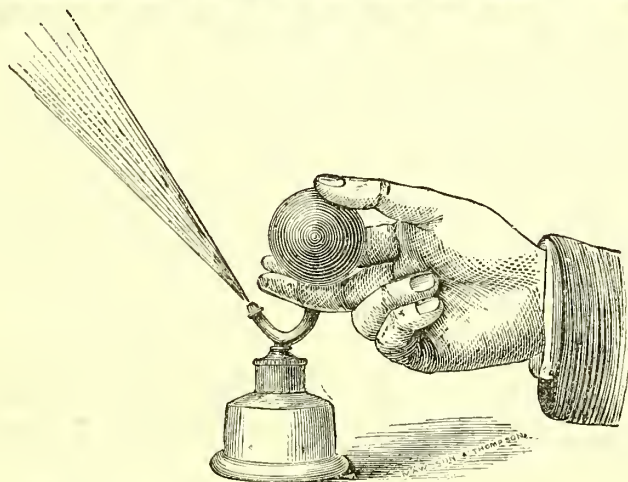
PER DOZ.

Portable, without Elastic Tube, 26s., Silver Plated, 30s. per doz.

THE CHATSWORTH SPRAY.

NICKEL
PLATED,
30s.

PER DOZ.



SILVER
PLATED,
34s.

PER DOZ.

With Handsome Cut Bottles, Nickel Plated, 42s.,
Gold Plated, 45s. per doz.

S. MAW, SON & THOMPSON, LONDON.

EAU DE COLOGNE

OF THE MOST ANCIENT DISTILLER,

JOHANN MARIA FARINA,

Opposite the Julichs Place, COLOGNE.

ESTABLISHED A.D. 1709.

PRIZE MEDALS:—LONDON, 1851 AND 1862; OPORTO, 1865; PARIS, 1867.

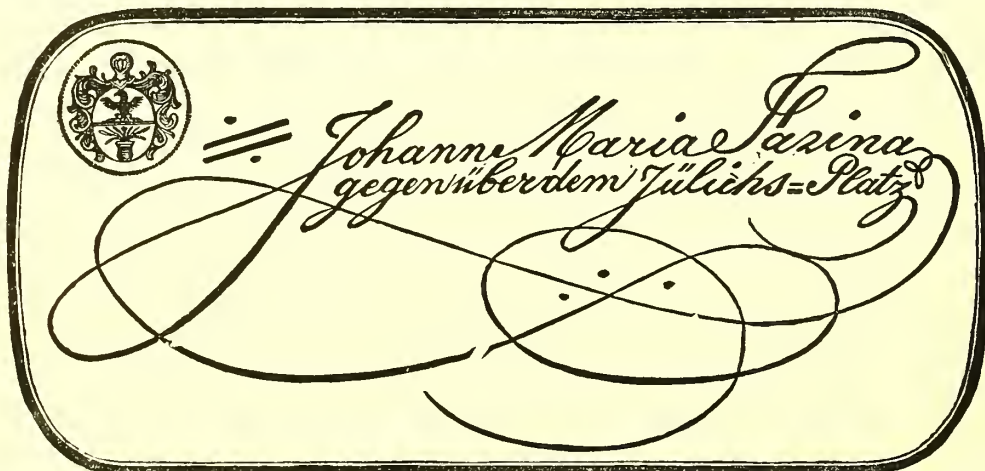
By appointment, Sole Purveyor to Her Most Gracious Majesty Victoria, Queen of Great Britain & Ireland; Their Royal Highnesses the Prince and Princess of Wales; William, King of Prussia;



Albert II., King of Saxony; Alexander II., Emperor of Russia; Francis Joseph, Emperor of Austria; Lewis, King of Portugal; H.R.H. Frederick William, Crown Prince of Prussia.

In consequence of increasing inquiries from the Colonies for my Eau de Cologne, the only genuine, I beg to submit my Price Current.

At the same time I beg to call special attention to the following facsimile of my Trade Mark, for the protection of which I have instituted thirteen suits in the High Court of Chancery, all of which have been decided in my favour.



All similar Labels being more or less imitations of the same, I shall proceed as before against all persons selling or exposing for sale any such imitations.

I only prepare one quality of Eau de Cologne. This quality never varies in the slightest degree, and there has not been the smallest change in the manufacture since the year 1709, when it was invented by my ancestor.

Orders equal to at least 12 dozen short bottles will be promptly executed at 12s. 6d. per dozen, against my bill drawn at three months from the date of invoice, delivered free on board the export ship, at Rotterdam, Antwerp, Hamburg, or Bremen, no charge being made for the case and packing, but insurance charged extra. 7½ per cent. discount is allowed for orders equal to at least 100 dozen, but on no smaller quantities.

I may add that, as I do not draw on the Colonies, all Orders must be accompanied by a credit on some London House, or permission to draw on same at three months.

The Goods can also be shipped in transit through London at a very small additional expense, full particulars of which may be obtained of my Sole Agents for Great Britain and Ireland:—

MESSRS. J. & R. McCracken,
No. 38 Queen Street, Cannon Street, London, E.C.

The following are the sizes of my bottles:—

| | | | | | | | |
|-------------------------------|-----------------------|-----|-----|-----|-----|------------|-----------------|
| No. 1. Long Green Flasks | } as per figure plate | ... | ... | ... | ... | 12 bottles | } to one dozen. |
| " 2. Short White Bottles | | ... | ... | ... | ... | 12 " | |
| " 3. Double ditto | | ... | ... | ... | ... | 6 " | |
| " 4. Wickered Bottles (small) | | ... | ... | ... | ... | 8 " | |
| " 5. ditto (medium) | | ... | ... | ... | ... | 4 " | |
| " 6. ditto (large) | | ... | ... | ... | ... | 2 " | |

JOHANN MARIA FARINA,
Opposite the Jülich's Place.

S. MAW, SON & THOMPSON'S BATH GLOVES, RUBBERS, &c.

Gloves. Straps. Pads.

Gloves. Straps. Pads.

CALEFACIO or BADEN, No. 1, soft

Brown . . . per doz. 6/4 10/8 6/0

CALEFACIO or BADEN, No. 2, hard

Brown . . . per doz. 6/4 10/8 6/0

CALEFACIO (the U.S.), Striped soft

Brown . . . per doz. 6/8 11/4 6/0

HONEYCOMB, white, per doz. 5/4 10/8 5/6

REVERSIBLE, No. 1, one side soft

Brown, the other best White

Turkish . . . per doz. 7/0 12/0 6/0

REVERSIBLE, No. 2, one side hard

Brown, the other White Honey-

comb . . . per doz. 7/0 12/0 6/0

"THE HAMMAM" TURKISH BATH,

per doz. 12/0 — —

TURKISH THIN WHITE GLOVES, per doz. 4/- PADS, per doz. 4/-

Ditto SUPERIOR QUALITY , 5/- , , 5/6

7 TO 12 ALDERSGATE STREET, LONDON.

A CERTAIN CURE FOR DEAFNESS.

By this valuable "Specific" hundreds have been cured of this distressing malady. For sold in the "Lead, with Noise" in the Ear, it is most efficacious. The highest testimonials are enclosed, with directions for use with each bottle

OSBORNE'S GOLDEN DROPS FOR DEAFNESS.



REGISTERED
TRADE MARK

OSBORNE'S GOLDEN DROPS FOR DEAFNESS.

The highest Testimonials are enclosed, with directions for use with each bottle.

Extract from "Brief."—"GOLDEN DROPS FOR DEAFNESS.—E. M. Osborne has produced a valuable specific for this distressing complaint. We have tested its efficacy, and can, with confidence, recommend it to the public as an excellent remedy. It is perfectly harmless, and the directions for use are plain and simple. It is secured by a registered trade mark, 'Human Ear,' by which the genuine article may be recognised."

TESTIMONIALS.

"EDGEASTON, MAY 4, 1877.—Sir,—My niece, who came to stay at my house, was suffering from Deafness and difficulty of breathing, owing to weakness of the tonsils caused by Quinsy. She tried your wonderful 'Specific,' and after applying it a little more than a week her hearing and breathing were quite restored. I am glad to communicate this as the medium of personal thanks and for the good of others.—Yours truly, C. L."

"CLAPHAM, SEPT. 5, 1877.—Sir,—Be so good as to send me six bottles of your 'Cure for Deafness,' and you will oblige. I am much better. Shall I go on with it? Be so good as to let me know. It has done me more good than physicians to whom I have paid twenty guineas; they cannot do me any good.—Yours, &c., J. P."

"CRYSTAL PALACE ROAD, EAST DULWICH, JUNE 10, 1878.—Sir,—During the last few weeks my little girl has been quite deaf, and suffering considerable pain in her left ear. I was recommended to use your 'Golden Drops for Deafness,' and I am delighted to say that, after applying them three times, they brought away two large secretions of foul matter. The child can now hear distinctly the faintest sounds, and is free from pain. I send you this testimonial unasked, in the hope that its publication may increase the sale of your truly valuable 'Golden Drops.'—Yours respectfully, I. H. S. N.B. If you will send me some testimonial sheets I will distribute them amongst my friends."

Sold by all Wholesale and Retail Chemists, price 1s. 1½d., 2s., 2s. 9d., and 5s. 6d.; or free by post for 1½d. extra from

E. M. OSBORNE, 26 THAVIES INN, HOLBORN CIRCUS, LONDON.

Wholesale and Export Agents—EVANS, SONS & CO., London; and EVANS, LESCHER & WEBB, London.



THE SANITARY FLUID



ANTISEPTIC DISINFECTANT for Preventing Epidemics and Destroying Infectious Diseases, as supplied to the Royal Arsenal, Woolwich. This Fluid is a powerful Antiseptic, Disinfectant, and Deodoriser, and from its harmlessness may be applied in any direction without any ill effects, and with the best possible results. **THE "PRINCESS ALICE" CALAMITY.**—The Sanitary Fluid was used at the Woolwich Dockyard for Disinfecting over 600 Bodies. The Clothing taken from the Bodies and over 500 Sheets were also Disinfected in large Caudrons, also the Building, Yards, &c., giving the greatest satisfaction to the Dockyard and Parish Authorities. The work was carried out under the superintendence of Mr. HARMER.

TESTIMONIAL.—"H.M. Dockyard, Woolwich, September 23, 1878. Sir, I beg to inform you that I consider your Disinfectant, as applied in the Dockyard both to buildings and clothing after the removal of the dead from the premises, very efficacious, and, from its cleanliness and absence of smell, very superior to the Disinfectants in the form of powder generally used.—Faithfully yours, J. T. BARRINGTON, Assistant Commissary General. Mr. Harmer, Stratford, E." For Asylums, Schools, Sanitary Authorities, Railway and Dock Companies, Workhouses, Shipping, Stables, Cowhouses, Cattle in transport, &c. Price 1/ per bottle; 3/6 per gallon; large quantities at a cheaper rate, of the Sole Manufacturer, W. J. HARMER, West Ham Lane, Stratford, E., or through Agents.

The MAGIC FLUID for General Household Purposes, price 1/6 per gallon. Write for Pamphlet, with Testimonials, &c. **NON-POISONOUS.**

SIDDALL'S CELEBRATED BEETLE POWDER!!

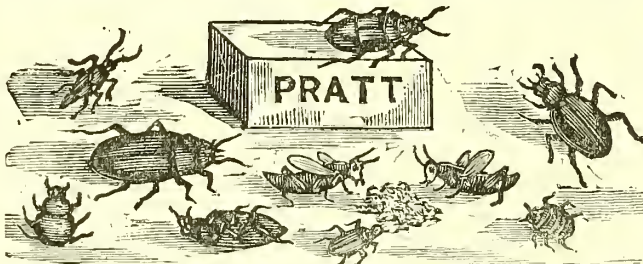
NO ADVANCE IN PRICE, BUT CHEAPER THAN EVER!!

Death to Beetles!!

Death to Cockroaches!!

Death to Crickets!!

3d., 6d., and 1s. packets.



Death to Black Clocks!!

Death to Bugs!!

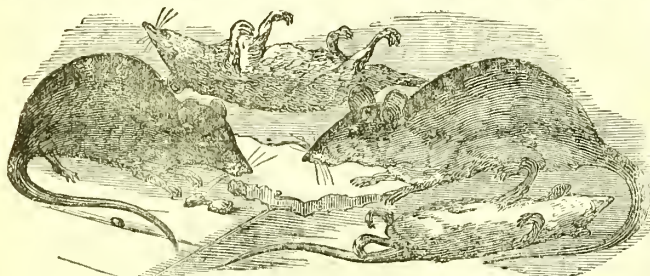
Death to Fleas!!

3d., 6d., and 1s. packets.

Has been established for more than Thirty Years, and is an excellent and most satisfactory Insecticide for the destruction of household pests—such as Black Clocks, Beetles, Crickets, Fleas, &c.

Sole Proprietor—HENRY J. PRATT (late SIDDALL), Pharmaceutical Chemist, YORK.

BATTLE'S VERMIN KILLER. { Mice eat it readily, and Die on the spot.



Has an immense Sale, and wherever introduced never fails to give satisfaction.—Mice appear attracted to it as by magic, eat it readily, tumble over, and die on the spot. Rats usually die in their runs.—Parties troubled with Vermin may be cleared at once, either from Stacks, Houses, or Ships.

TESTIMONIALS.—Thousands might be published.

From Mr. THOMAS COLTON, Agent for Selby.—A friend of mine purchased a Packet of your VERMIN KILLER last night, doubting its efficacy; to-day he called in to say that he had found fifteen dead mice, and had only used part of a packet.—From Mr. EDWARD STUBBY, Flemington Mills.—I duly received by post the Packet of your VERMIN KILLER, and found it as represented in your advertisement. It speedily destroyed all the mice in my granary. I enclose 2s. for two more Packets.—Leeds, November 6th 187.—I have tried BATTLE'S VERMIN KILLER, and have found it most effectual in clearing my premises of LARGE QUANTITIES OF RATS.—THOMAS S. CROSLAND.—Mr. Stead.

Sold in Packets, 3d., 6d., and 1s. each.

SOLE PROPRIETOR:

Mr. J. R. BATTLE, Chemist, Lincoln, England.

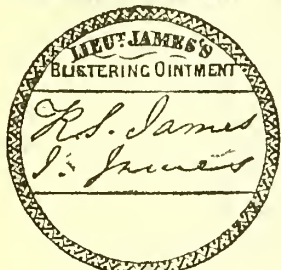
No Chemist or Storekeeper should be without a supply.

ESTABLISHED 1833. HORSES.—LIEUT. JAMES'S BLISTER.

CAUTION.

The annexed Label is at the top of every Pot of the ORIGINAL and only GENUINE BLISTER.

The Messrs. Barclay & Sons, 95 Farringdon Street, London, and Messrs. Raines & Co., Edinburgh, Liverpool, and York, are now and have been Agents 45 years.



AGENTS:—Sutton & Co., 10 Bow Churchyard; W. Edwards & Son, 157 Queen Victoria Street; Newbery & Son, 37 Newgate Street; Evans, Lescher & Evans, Bartholomew Close; Burgoyne, Burdidge & Co., 16 Coleman Street; Lynch & Co., 171A Aldersgate Street; W. Mather, Farringdon Road, London, and Manchester; Tidman & Son, Wilson Street; Sanger & Son, 150 Oxford Street; Millard & Sons, 40 Charterhouse Square; Corry & Soper, Sbad Thames; A. A. Campbell, Leadenhall Street, London; Woolley, Sons & Co., 59 Market Street, Manchester; Apothecaries' Company, Virginia Street, Glasgow; Boileau & Co., Bride Street, Dublin; McMaster & Co., 121 & 122 Capel Street, Dublin; Hunt & Co., 17 Westland Row, Dublin; Clarke & McMullen, Victoria Street, Belfast; D. Galbraith, Londonderry. And by all Chemists, in Pots, 1/6, 2/9, and 5/.

COLONIAL AGENTS:—MELBOURNE and WELLINGTON: Felton, Grimwade & Co.; SYDNEY, BRISBANE, and LAUNCESTON: Elliott Bros. & Co.; DUNEDIN and AUCKLAND: Kempthorne, Prosser & Co.; CALCUTTA: Smith, Stanistreet & Co.

R. S. JAMES, 31 Years Sole Manufacturer, STANFORD, FARRINGTON, BERKS. Advertised in "Bell's Life" 45 years. Beware of a Spurious Imitation.

100 Rats destroyed for a Shilling by

BARBER'S PHOSPHOR PASTE.

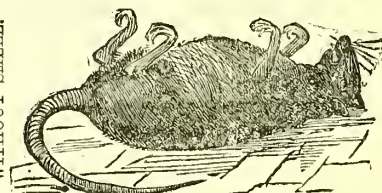
WRAPPED NEATLY FOR THE COUNTER.

You would never sell any other if you were desirous of pleasing your Customers.

CATS AND DOGS WON'T EAT IT.

Kills Rats, Beetles, &c.

THE DEAD VERMIN DRY UP WITHOUT SMELL.



Guaranteed the best destroying Paste in the world.

3d., 6d., 1s., 2s. 6d., and 5s. Tins. Also

BARBER'S VERMIN KILLER.

Kills Mice upon the spot. In packets, 3d., 6d., and 1s.

Testimonial from Her Majesty's Ratcatcher.

"Hampton, Middlesex, May 25th, 1870.—I have been more than forty years employed at Hampton Court Palace, the Royal Stables, and other buildings in and around the Royal Parks, for the destruction of rats, mice, and other vermin, and after trying all the rat poisons which I have heard of, I now use BARBER'S PHOSPHOR PASTE and VERMIN KILLER, with which alone I am able to keep these ancient palaces and national works free from vermin. (Signed) CHARLES SHONES"

WORKS, SALISBURY: ESTABLISHED 1848.

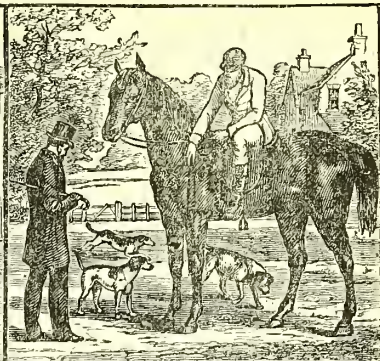
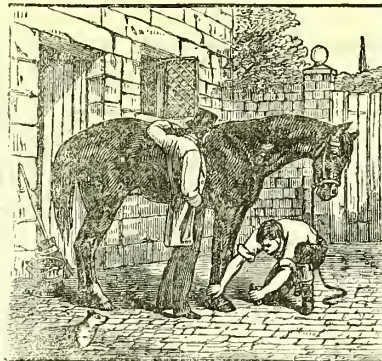
Special Quotations to Shippers. Supplied by all the London Wholesale Houses.

ELLIMAN'S ROYAL EMBROCATION
IN BOTTLES 2s. 2s. 6d. & 3s. 6d. EACH

A CERTAIN CURE FOR

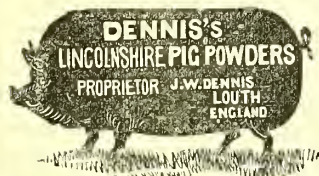
Broken Knees,
Sore Backs, Sore Throats,
Bruises, Sore Throats,
Intestines,
Sprains, Cuts, Splints,
Springing Sinews, Overreaches,
Chapped Heels,
Wounds, Lameness,
Furunculæ, &c.

ELLIMAN'S ROYAL EMBROCATION
is used in most of the Stables of the Masters of
Stag and Fox Hounds; among others—Baron Rothschild,
Mentmore, near Leighton Buzzard; Earl of Maclefield,
The Marquis of Huntly; Hon. R. Baillie Hamilton, M.P.;
Lord Middleton; Duke of Buccleuch; Earl of Yarborough;
Earl of Shannon; Earl of Eglington and Winton; J. T. D.
Llewellyn, Esq.; A. Brassey, Esq.; J. B. Booth, Esq.; C.
Morrell, Esq.; Capt. R. Toulson Rye; Lieut.-Col. Everett.



Lame Hunter. (Trade Mark.) The Royal Hunter Cured.
ELLIMAN'S ROYAL EMBROCATION.

DENNIS'S CELEBRATED LINCOLNSHIRE PIG POWDERS



TRADE MARK. NO. 14389.

THESE Powders have now been before the Public for Ten Years. The large and increasing sale, together with the numerous testimonials constantly being received, prove that the public are fully alive to the fact that they are the **BEST MEDICINE** for **DISEASES** to which **PIGS** are subject and are also the best **CONDIMENT** known. They have an immense sale wherever introduced, and the Proprietor is desirous to assist all who will undertake to keep them in stock by supplying them with Show Cards, Posters, and Counter Bills with name and address thereon. They are put up in Penny Powders, each Powder a full dose; but are almost invariably sold in Packets containing Six and Twelve Powders to Retail at Fivepence and Tenpence. Retailers will be charged 40/- per Gross for Fivepenny, and 80/- per Gross for Tenpenny Packets, less usual discount, by

Hovenden & Son, W. Mather, Newbery & Son, and W. Edwards & Son, London; Lofthouse & Co., Hull
Raimes & Co., York; or from the Proprietor,

JOHN W. DENNIS, CHEMIST, LOUTH, LINCOLNSHIRE, ENGLAND.

HORSE, CATTLE, AND SHEEP MEDICINES.



By Special Warrant,
Dated 27th December, 1865.

BY ROYAL APPOINTMENT.

DAY, SON & HEWITT,

INVENTORS AND SOLE PROPRIETORS OF THE



By Special Warrant,
Dated 10th February, 1866.

"ORIGINAL" STOCK BREEDERS' MEDICINE CHESTS,

For all Disorders in Horses, Cattle, Calves, Sheep, and Lambs.

Patronised for over 40 years by Royalty, and the principal Stock Breeders, Horse Proprietors, and Agriculturists of the British Empire.

The No. 2 MEDICINE CHEST contains the following matchless remedies:—

- "CHEMICAL EXTRACT," for all External Injuries, and Ewes Lambing.
- "GASEOUS FLUID," for Colic, Scour, or Diarrhoea, and Debility.
- "RED DRENCH," for Cleansing Cows and Ewes, and for Inflammation.
- "RED PASTE BALLS," for Mares after Foaling, and Conditioning Horses.
- "BRONCHOLINE," for Husk or Hoose in Sheep, Lambs, and Calves.
- "GASEODYNE," for Heaving and Paining, "CARMINATIVE CHALK," &c.

Price of Chest, with Guide to Farriery, £2 16s. 6d. No. 1 Complete Medicine Chest, in Polished Case, £6s. 6s.
Horsekeeper's Chest, No. 4, £2 17s. 6d.

CARRIAGE PAID TO ALL PARTS.

Admirably adapted for all ordinary ailments among Stock, and each preparation can be had separately. Full and easy directions enclosed.
Patronised by Royalty and the leading Agriculturists of the British Empire, and awarded "Certificate of Merit" by the National Agricultural Society of Victoria, Australia, Spring Exhibition, 1871; President's Medal at the Spalding Show, July, 1872; Silver Medal, Manchester and Salford Show, November, 1874; Silver Medal, Preston Agricultural Show, June, 1875; Silver Medal, Northamptonshire Agricultural Society, Stamford Show, September, 1875; Silver Medal, Cheshire Agricultural Society, Crewe Show, September, 1875; Special Prize, National Agricultural Society of Victoria, Australia, Spring Exhibition, November, 1875; Medal, Cheshire Agricultural Society, Cheshire Show, 1876; Silver Medal, South African Exhibition, Cape Town, 1877; Silver Medal, Northumberland Agricultural Society, Newcastle-on-Tyne Show, August, 1877; Silver Medal, Knutsford Show, July, 1878; Medal, North Berwick Show, July, 1878; and Medal, Dairy Show, London, October, 1878.

CAUTION.—Beware of low-priced Imitations, and see that the name of DAY, SON & HEWITT is on all Bottles and Packets.

Prepared only by **DAY, SON & HEWITT, 22 DORSET STREET, BAKER STREET, LONDON, W.**

And sold by Messrs. Burgoyne, Burbidges & Co., Barclay & Sons, W. Edwards, Newbery & Sons, Sanger & Sons, and all Wholesale Druggists, in London; Hood & Co., Melbourne; Kempthorne, Prosser & Co., Dunedin and Auckland; Fairthorne & Co., Launceston.

CHEMISTS

Are invited to send to the Laboratory for a gratis supply of

"AMICUS CANIS"

for distribution amongst their clients. A demand for the MEDICINES almost invariably follows their circulation. The Pamphlet is neatly got up, and forms a welcome gift to all who keep dogs.



The Medicines may be obtained of the Wholesale Houses, or direct from the Laboratory for Cash.

RHODES' CURATIVE AND CONDITION MIXTURE FOR DOGS,

Especially recommended to the Nobility, Master of Hounds, Hunting Men, and Dog Fanciers.

The best known Remedy for the effectual Cure of Distemper, Worms, Vomiting, Diseases of the Skin, will promote Appetite and Condition, giving a smooth coat and a healthy condition. Enulogised in terms of the highest approbation by all who have tried it as a cure and prevention (which is better than cure).

"Caractacus," in the *Sportsman's Journal*, April 12, 1879, in his article on the Rearing of Young Dogs, &c., says, in speaking of the various remedies for the different Diseases of Dogs, "In all fairness we must not omit Mr. Rhodes' Mixture, which I have tried on many occasions and never knew it to fail."

Sold in Bottles, at 1s., 2s. 6d., and 4s. 6d.; for the use of large kennels in Tins at 2s., containing twelve 2s. 6d. bottles; and 4s. Tins, containing twenty four 2s. 6d. bottles—A GREAT SAVING. The Tins forwarded CARRIAGE PAID to all parts of the United Kingdom upon receipt of the amount.

May be obtained from the principal Wholesale Houses, or the Proprietor and Inventor,

JOSEPH RHODES, Chemist, East-thorpe, Mirfield.

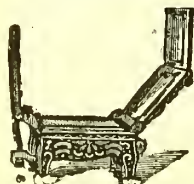
PURE LEICESTERSHIRE LEAF LARD, especially prepared for Pharmaceutical use, in 10-lb. air-tight tins, 6d. per lb.; also in 1, 2 and 3 cwt. casks, 42s. per cwt.; slightly tinged lard for sheep and cattle ointment, 37s. per cwt.; finest lard oil, 3s. 9d. per gallon; fine neatfoot oil, 4s. per gallon; Cooper's "Excelsior" machine oil, 2s. 7d. per gallon; an excellent lubricant for light machinery, 2s. per gallon; dark lubricant, 1s. 10d. per gallon. The Trade only supplied. Apply, J. Cooper, Lard and Oil Merchant, Church Gate, Leicester.

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PRINTING PRESSES (all Iron) 25s.
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At home and abroad, by forwarding

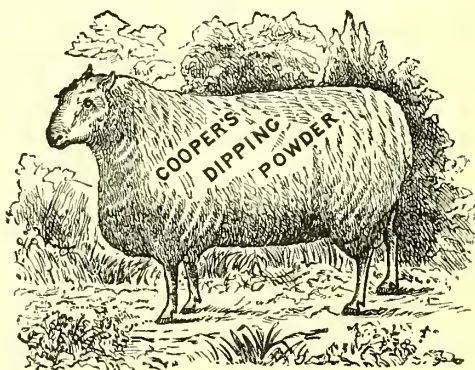
"AMICUS CANIS"

to retail Chemists for distribution, will find a profitable demand created for the MEDICINES. Any quantity will be supplied gratis, with name of firm inside cover, on application at the Laboratory.

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WANTED, Chemists and Druggists with a trade amongst Farmers, as AGENTS for one of the best and cheapest CONDIMENTS made. Wherever introduced it is largely sold, and the demand for it steadily increases.

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Is soluble in Cold Water, and should be used in preference to any other Dip,

FOR TICKS, FLY, SCAB, AND FOR ALL OTHER SHEEP DIPPING PURPOSES.

This Dip has been in use upwards of 35 years, and has never been equalled by any other; it is of uniform strength, does not stain the wool, and is equally good as a Summer or Winter Dip. It is especially recommended for Dipping Lambs, and as a certain Cure for Scab.

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The best combined Volatile and Non-Volatile

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Manufactured by

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INSIST ON THE PRICES QUOTED ABOVE. WHY PAY MORE FOR IMITATIONS?

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Prepared by Royal Letters Patent.

Is neat and clean and convenient for use. Being airtight and odourless, remains its strength unimpaired. It is admirably adapted for Export, and will keep for years in any climate.

Packed in 2-1/2, 5, 10, 20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 250, 300, 400, 500, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000, 2500, 3000, 4000, 5000, 6000, 8000, 10000, 12000, 14000, 16000, 18000, 20000, 25000, 30000, 40000, 50000, 60000, 80000, 100000, 120000, 140000, 160000, 180000, 200000, 250000, 300000, 400000, 500000, 600000, 800000, 1000000, 1200000, 1400000, 1600000, 1800000, 2000000, 2500000, 3000000, 4000000, 5000000, 6000000, 8000000, 10000000, 12000000, 14000000, 16000000, 18000000, 20000000, 25000000, 30000000, 40000000, 50000000, 60000000, 80000000, 100000000, 120000000, 140000000, 160000000, 180000000, 200000000, 250000000, 300000000, 400000000, 500000000, 600000000, 800000000, 1000000000, 1200000000, 1400000000, 1600000000, 1800000000, 2000000000, 2500000000, 3000000000, 4000000000, 5000000000, 6000000000, 8000000000, 10000000000, 12000000000, 14000000000, 16000000000, 18000000000, 20000000000, 25000000000, 30000000000, 40000000000, 50000000000, 60000000000, 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THE LIFE OF FLOWERS,

FOR STIMULATING AND QUICKENING THE GROWTH OF PLANTS, AND PRODUCING A RAPID AND HIGH DEVELOPMENT OF BLOSSOM.

This valuable Preparation is the result of several years' exhaustive trials, and it is scarcely possible to speak too confidently of it. Plants of all descriptions, from the best known to the rarest and costliest, develop their blossom and foliage with extraordinary quickness and beauty when the Florvita is applied to them. So also with Fruits and Vegetables, which, under this treatment, reach perfection with great rapidity.

To ladies who take an interest in their flowers, both indoors and out, Florvita particularly recommends itself; for though chemically it represents a very highly concentrated fertiliser, it has not the appearance or character of what is known under the head of "Flower Manures," being a delicate pink powder soluble in water, with a most agreeable bouquet.

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"A boon which amateurs, and lady gardeners especially, will welcome. According to our experience of a small quantity, it is readily dissolved in water, can be applied to plants grown in rooms without the least objection, and well answers its purpose as a fertiliser."

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"The preparation is readily soluble in water, and perfectly free from all disagreeable smell, and it may be regarded as the concentrated essence of the most valuable manures, deprived of all the disagreeable smelling and useless products of partial decomposition which generally accompany ordinary manures."

"The facility with which it can be applied, and the small quantity required to produce a visible effect upon flowers, render it an elegant and efficacious substitute for liquid manure, guano-water, &c., for use in Greenhouses and in the Flower Garden."

"A preparation so rich in Soluble Phosphates, Salts of Ammonia, Nitrates of Potash and Soda, as your Florvita, I believe, may also be used as a highly concentrated fertiliser for vegetables and every kind of kitchen garden produce."

From THE HORTICULTURAL RECORD.

"The results of our experiments upon plants in small pots made with this material, by contrast with equal numbers similarly treated, but with ordinary water, are truly surprising."

DIRECTIONS FOR USE.—One teaspoonful of the Florvita to be added to each gallon of water used. The plants should be watered with it once or twice a week.

Prepared only by **PRENTICE BROS.**, Chemical Laboratory, STOWMARKET.

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It has also the very great advantage of being **QUITE HARMLESS**, and possesses the **DELICIOUS and FRAGRANT ODOUR of WILD THYME**.

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PATENT PLUMBAGO CRUCIBLE COMPANY

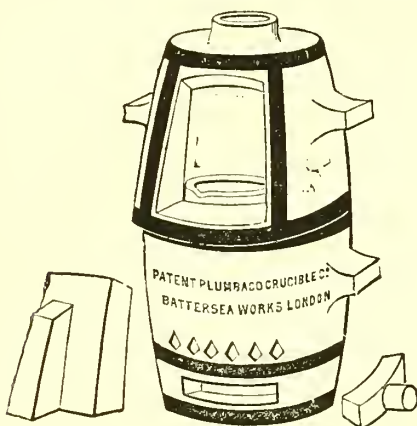
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PORTABLE FURNACES.

IRON BOUND. EXTERIOR DIMENSIONS.

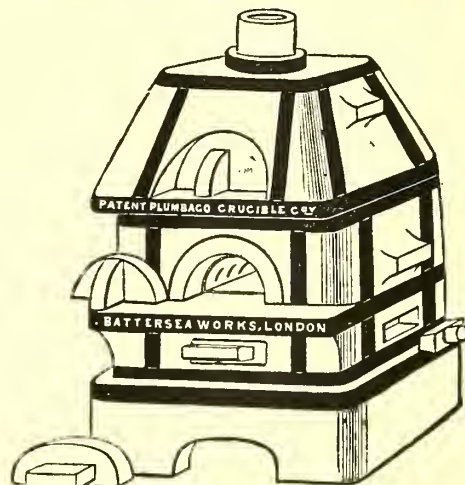
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For ASSAYING, DENTAL WORK, &c.



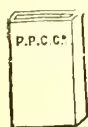
No. 1.

| Melting Furnaces | Diam. | Height | For a Morgan's Patent Crucible | Price |
|------------------|-------|--------|--------------------------------|---------|
| No. | in. | in. | No. | £ s. d. |
| A | 9½ | 17½ | 2 | 1 0 0 |
| B | 9½ | 20 | 4 | 1 5 0 |
| C | 11 | 22 | 6 | 1 10 0 |
| D | 13½ | 26 | 8 | 2 5 0 |
| E | 14½ | 28 | 12 | 3 0 0 |
| F | 18 | 32 | 16 | 4 0 0 |



No. 2.

| Muffle Furnaces | Diameter | Height | Furnace |
|-----------------|----------|--------|---------|
| No. | in. | in. | £ s. d. |
| A | 12½ | 24½ | 2 0 0 |
| B | 13½ | 25½ | 2 5 0 |
| C | 14½ | 27 | 2 10 0 |
| D | 15½ | 28½ | 3 0 0 |
| E | 16½ | 29½ | 3 10 0 |
| F | 17 | 30 | 4 0 0 |



FLAT.

Diam. 1 in., height 4 in., 1/6; 5 in., 2/ per dozen.
 " 1½ in., " 4 in., 2/; 5 in., 2/6; 6 in., 3/ per dozen.
 " 2 in., " 4 in., 2/6; 5 in., 3/; 6 in., 4/; 7 in., 4/; 8 in., 4/6;
 " 2½ in., " 4 in., 3/; 5 in., 3/6; 6 in., 4/; 7 in., 4/6; 8 in., 5/; 9 in.,
 " 3 in., " 5 in., 4/; 6 in., 5/; 7 in., 5/6; 8 in., 6/; 9 in., 7/;
 10 in., 9/; 11 in., 12/; 12 in., 16/; 13 in., 17/ per doz.

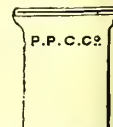
POROUS BATTERY CELLS

RED OR WHITE.



ROUND.

OUTSIDE DIMENSIONS.



FLAT, WITH EARS.

Diam. 3½ in., height 6 in., 5/6; 7 in., 6/; 8 in., 7/; 9 in., 7/6; 10 in., 9/;
 " 4 in., " 6 in., 6/; 7 in., 6/6; 8 in., 8/; 9 in., 9/; 10 in., 10/;
 " 4½ in., " 7 in., 7/; 8 in., 8/6; 9 in., 10/; 10 in., 12/; 11 in., 16/;
 " 5 in., " 7 in., 8/; 8 in., 9/; 9 in., 12/; 10 in., 14/; 11 in., 16/;
 12 in., 20/; 13 in., 20/ per dozen.

FLAT, all with Ears except those Numbers with *

| No. | Hght. | Width | Depth | Price | No. | Hght. | Width | Depth | Price | No. | Hght. | Width | Depth | Price | No. | Hght. | Width | Depth | Price |
|-----|-------|-------|-------|-------|-----|-------|-------|-------|-------|-----|-------|-------|-------|-------|-----|-------|-------|-------|-------|
| 1* | 4½ | 2½ | 1½ | 4/ | 15* | 6½ | 4 | 1½ | 8/ | 29 | 6½ | 4½ | 1 | 8/ | 43 | 5½ | 3 | 1 | 6/ |
| 2 | 4½ | 2½ | 1½ | 4/ | 16 | 6½ | 4½ | 1 | 10/ | 30 | 6½ | 4½ | 1 | 14/ | 44 | 5 | 3 | 1½ | 6/ |
| 3 | 4½ | 2½ | 1½ | 4/ | 17* | 7½ | 6½ | 1 | 18/ | 81 | 7½ | 5½ | 1 | 14/ | 45 | 5½ | 7 | 1½ | 20/ |
| 4 | 4½ | 2½ | 1½ | 4/ | 18* | 8½ | 5½ | 2½ | 18/ | 32 | 8½ | 5½ | 1 | 14/ | 46 | 5½ | 4½ | 1 | 8/ |
| 5 | 4½ | 2½ | 1½ | 4/ | 19* | 10½ | 6½ | 1½ | 24/ | 33 | 8½ | 7½ | 1½ | 20/ | 47 | 6 | 6½ | 1½ | 12/ |
| 6* | 4½ | 2½ | 1½ | 5/ | 20* | 14½ | 8 | 2 | 36/ | 34 | 7½ | 4½ | 1½ | 12/ | 48* | 4½ | 3½ | 1½ | 8/ |
| 7 | 4½ | 2½ | 1½ | 4/ | 21 | 5½ | 8½ | 1 | 6/ | 35* | 4½ | 2½ | 1½ | 4/ | 49* | 4½ | 3½ | 1½ | 6/ |
| 8 | 4½ | 2½ | 1½ | 4/ | 22 | 7 | 4 | 1 | 12/ | 36 | 5½ | 4½ | 1½ | 8/ | 50* | 4½ | 3½ | 1½ | 8/ |
| 9 | 4½ | 2½ | 1½ | 6/ | 23 | 4½ | 2½ | 1 | 4/ | 37 | 6½ | 3½ | 1½ | 6/ | 51 | 6 | 4½ | 1½ | 6/ |
| 10 | 4½ | 2½ | 1½ | 4/ | 24 | 4½ | 4½ | 1 | 8/ | 38* | 6 | 4 | 1½ | 8/ | 52 | 5½ | 3½ | 1½ | 6/ |
| 11 | 4½ | 2½ | 1 | 6/ | 25 | 4½ | 5½ | 1 | 10/ | 39* | 4½ | 2½ | 1½ | 4/ | 53* | 4½ | 3½ | 1½ | 6/ |
| 12* | 5 | 3 | 1 | 6/ | 26 | 5½ | 4½ | 1 | 3/ | 40 | 4½ | 2½ | 1½ | 6/ | 54* | 4½ | 3½ | 1½ | 8/ |
| 13 | 5½ | 3½ | 1½ | 8/ | 27 | 4½ | 2½ | 1 | 4/ | 41 | 4½ | 2½ | 1½ | 4/ | | | | | |
| 14* | 4½ | 4½ | 1½ | 8/ | 28 | 6½ | 3½ | 1 | 8/ | 42* | 6½ | 4 | 1½ | 8/ | | | | | |

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|-----|---------------|---------|------|-----|--------|
| 1s. | Boxes, 7 lbs. | Weight, | 9s. | per | dozen. |
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| 4s. | „ 28 lbs. | „ | 34s. | „ | „ |

WM. SCHWEITZER'S TARAXACUM OR DANDELION COFFEE.

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|---------|------|---|---|---|------|-----|--------|
| 6d. | Tins | - | - | - | 4s. | per | dozen. |
| 1s. | „ | - | - | - | 8s. | „ | „ |
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MISS PIKE'S FIT POWDERS,

2s.9d. size, 27s., 4s.6d. size, 42s., 11s. size, 108s. doz.

SUBJECT TO USUAL DISCOUNT.

Proprietors, ALLEN, PEARCE & CO.,
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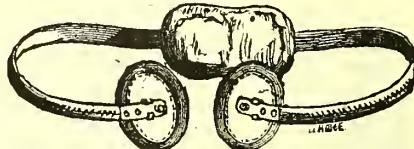
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FIG. 5.



SUSPENSORY BANDAGES—continued.

| No. | | | |
|-----|--|----------|--------|
| 6. | Silk Oxonian, superior quality, bands of buff jean, with drawing-strings | per doz. | £1 4 0 |
| 7. | Silk Bags, to button on, with tape under-straps.. | " | 1 1 0 |
| 8. | " " " under-straps to button .. | " | 1 4 0 |

ELASTIC STOCKINGS, KNEE-CAPS, ETC

| SUSPENSORY BANDAGES. | | | | |
|----------------------|---|----|----|----------------|
| No. | | | | |
| 1. | Cotton Bags and tape under-straps .. | .. | .. | per doz. 0 8 0 |
| 2. | Cotton Oxonian, with drawing-strings .. | .. | .. | " 0 10 0 |
| 3. | Silk Bags and tape under-straps .. | .. | .. | " 1 1 0 |
| 4. | Silk Oxonian, with drawing-strings .. | .. | .. | " 0 18 0 |
| 5. | " " Bags bound with elastic .. | .. | .. | " 1 4 0 |

| SUSPENSORY BANDAGES. | | | | | |
|----------------------|--|----|----|----------|--------|
| No. | | | | | |
| 1. | Cotton Bags and tape under- straps .. | .. | .. | per doz. | 0 8 0 |
| 2. | Cotton Oxonian, with drawing- strings .. | .. | .. | " | 0 10 0 |
| 3. | Silk Bags and tape under- straps .. | .. | .. | " | 1 1 0 |
| 4. | Silk Oxonian, with drawing- strings .. | .. | .. | " | 0 18 0 |
| 5. | " " Bags bound with elastic .. | .. | .. | " | 1 4 0 |

| <i>Manufactured expressly for Export, and warranted to stand a hot climate better than any others in the Market.</i> | | | | Silk. | Super. Silk. | Cotton. | Snper. Cotton. |
|--|----|----|------|---------|--------------|---------|----------------|
| | | | | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| Stockings | .. | .. | pair | 0 9 0 | 0 13 6 | 0 5 3 | 0 6 6 |
| Knee-caps | .. | .. | .. | 0 6 0 | 0 9 6 | 0 3 6 | 0 5 0 |
| Calf-pieces | .. | .. | .. | 0 6 8 | 0 9 0 | 0 4 0 | 0 5 6 |
| Socks | .. | .. | .. | 0 5 0 | 0 7 6 | 0 3 3 | 0 4 6 |
| Wristbands | .. | .. | .. | 0 2 0 | — | 0 1 6 | 0 2 0 |
| Knee Stockings | .. | .. | .. | 0 15 0 | 1 3 0 | 0 8 9 | 0 11 6 |
| Belts, to draw on | .. | .. | each | 0 15 0 | 1 1 0 | — | 0 9 0 |

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See BRITISH MEDICAL JOURNAL, October 26th, 1878; December 14th, 1878; LANCET, October 12th, 1878.

| | | | | | | | | | | | | | |
|--------|----------------------|----|----|----|----------|--------|--------|---------------------|----|----|----|----------|----------|
| No. 1. | 10½ feet by 3 inches | .. | .. | .. | each 8/- | medium | No. 7. | 14 feet by 3 inches | .. | .. | .. | each 7/6 | thin |
| " 2. | 21 " by 3½ " | .. | .. | .. | " 22/6 " | " | " 8. | 14 " by 3 " | .. | .. | .. | " 6/- | thinnest |
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| " 4. | 15 " by 3½ " | .. | .. | .. | " 16/- | stout | " 10. | 12 " by 2 " " | .. | .. | .. | " 6/- | " |
| " 5. | 6 " by 3½ " | .. | .. | .. | " 6/6 " | " | " 11. | 15 " by 2½ " | .. | .. | .. | " 8/- | " |
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The Price we are now asking is the same as last year, viz.:—In 1 cwt. **ORIGINAL CASKS**, at 104s. per cwt., Casks Free; and in the usual size Jars, holding 1 lb., 2 lbs., 3 lbs., and 4 lbs. each, at 1s. 1d. per lb., Jars included.

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See "CHEMIST AND DRUGGIST," December 15th, 1874.

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PANCREATIC EMULSION, or MEDICINAL FOOD, is the most reliable form of nutriment for counteracting all tendencies to Phthisis and other wasting Diseases. It presents to the Lacteals fat in essentially the same condition for assimilation and absorption as in the vigorous human frame, and the agent of the important change is the natural secretion of the Pancreas.

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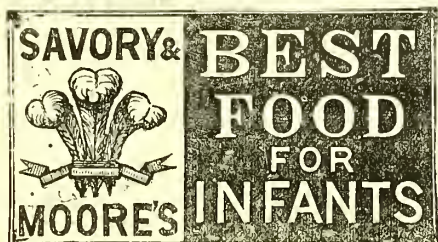
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An index to the advertisements, and the terms for insertion, will be found on page 33.

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A paragraph which appeared in this column last month, stating that the Pharmaceutical Council had negatived a proposal to proceed against co-operative stores for infringement of the Pharmacy Act by the sale of poisons, has been quoted by the President of the Pharmaceutical Society (we believe this to have been the paragraph referred to) as a piece of unauthorised reporting, which was "altogether a misapprehension of facts." Other members of the Council seemed to think that some member of the Council had communicated the information to this journal. It is not our fault if the two theories will not coincide.

The Select Committee of the House of Commons on the Medical Bills has not been able to complete its inquiry, and as therefore decided to report the evidence taken, and suggest its own re-appointment next Session.

The Select Committee of the House of Commons on co-operative Stores has lately examined several representatives of the stores and their friends, and on August 6 Sir Massey Lopes, the chairman, brought up the report of the Committee to the House of Commons. The Committee ask leave to complete their inquiry next Session.

We publish among our Editorial Notes an important piece of information which we have obtained from the Board of Inland Revenue. It is to the effect that any patent medicine may be sold out in small quantities, provided it be not enclosed in any box, bottle, or packet other than a mere paper covering.

A chemist has been prosecuted and fined at Sunderland for selling methylated spirit without a licence. He was defended by the Chemists and Druggists' Trade Association.

The Pharmaceutical Council has adopted a motion, introduced by Mr. Symes, the effect of which will probably be to cause a fuller report of the proceedings of the Council in committee. An instance came forward at the same meeting of the omission or suppression, in the last report, of an addition which had been made to the salaries of some of the officials.

A statement has been published that Professor Meyer, of Zurich, who has lately devised a new method of determining gaseous densities at high temperatures, and who has proved already that at 1,200° C. the density of chlorine diminishes in the same way as oxygen, has since discovered that oxygen is a component of chlorine. No particulars of his experiments have yet been announced.

A correspondent in Dublin favours us with sketches and heraldic details which seem to prove that the seal used by the Pharmaceutical Society of Ireland is not that which they described, and which they are authorised to use. How far this will invalidate all their proceedings is for them and their lawyers to settle.

A correspondent, who has had a long experience in China, favours us with an interesting article on the cultivation of opium in that empire, which will be found on page 331. Our contributor argues, or at least implies, that because the Chinese will have opium, no fault ought to be found with the policy of our Government in compelling that of China to submit to the commerce in opium of Indian production. His opinion is not likely to be generally accepted.

The story of the "Cinchona Calisaya Ledgeriana," which we give on page 320, shows by what a narrow chance the British Government missed, and the Dutch Government obtained, for its early years, at least, a monopoly in this valuable variety of the Calisaya species.

On page 316 we print an important pharmaceutical contribution on "Aromatic Powder of Chalk." The article describes a peculiar fraud which is apparently practised in the manufacture of this compound, which consists in using exhausted saffron. Our contributor's experiments have resulted in indicating a valuable test for saffron in its original condition, and also in the observation of a defect in an alleged test which was brought before the Glasgow Pharmaceutical Conference.

According to the Registrar-General's returns 205 people died of diarrhoea in the 26th, 27th, and 28th weeks of this year in London and the other 20 largest towns of the kingdom, while, in the corresponding period of 1878, 1,501 persons died from the same cause in those places.

The forty-seventh annual meeting of the British Medical Association was held in Cork on August 5 and three following days. The British Pharmaceutical Conference will meet in Sheffield on August 19 and 20. An unusually large number of members have written, we learn, to state their intention of being present. The Annual Congress of Homœopathic Practitioners will meet at Malvern on September 11.

The abolition of the Customs duty on quinine in America has caused a rise, instead of a fall, in the price. The circumstance is easily explainable, but it has been used by some pharmaceutical writers of the United States as a clinching argument against free trade. Their most superficial readers will see that their articles indicate either want of logic or want of candour.

Dr. D'Unger, of Chicago, writes us again in reference to his bark cure, explaining that his previous remarks applied only to those druggists who sold any bark preparation as his. "Only struck birds flutter," adds the doctor. An advertisement of his preparation of bark also appears in our pages.

We complete in this number the paper on "Parasites" read before the Chemists' Assistants' Association, and print another, read before the same Society, on "Tobacco." Our medical contributor "M.R.C.S." gives an article on "Diarrhœa."

On page 319 we give a description and view of the new drug warehouse erected by Messrs. Evans, Lescher & Webb, together with a brief sketch of the history of that firm.

Mr. John Hollway's ingenious process for employing sulphides as fuel, the chemical action freeing the sulphur and at the same time providing heat, is explained on page 312.

Further researches on the aconite and veratrum alkaloids by Messrs. Wright & Luff are condensed on page 313.

The Sale of Food and Drugs Act Amendment Act will be found on page 322.

This Amendment Act finally obliterates the chance of the plea that a purchaser having bought goods for the purpose of analysis is not prejudiced if the same are adulterated. It also makes new provisions respecting milk, defines the limits to which brandy, rum, whisky, and gin may be diluted, and requires that summonses shall be served on accused persons within a reasonable time (28 days in the case of perishable goods), and shall not be returnable in less than seven days.

A legal dispute has arisen in America between Messrs. Low, Son & Haydon, on the one hand, and their former partner, Mr. Benbow, on the other, both London wholesale perfumers, as to the right of selling brown Windsor soap in packets of a certain character or resembling each other. A day or two ago Mr. Benbow applied to the Chancery Court for an injunction to restrain Messrs. Low from sending threatening letters on this subject to American importers. The judge, however, concluded that he could not interfere with the issue of these "mere lawyers' letters."

Some of the medical journals have commented favourably on the suggestion lately made by the Rochdale chemists that the medical practitioners of that town should discontinue the practice of dispensing their medicines. There are some difficulties in the way, but a courteous agitation of the subject in various parts of the country could not fail to have a beneficial effect, and we hope that the Rochdale example will be followed.

TESTS FOR OILS.—Maumené considers that the only trustworthy characteristic of oils is the heat liberated on mixing 50 grammes of the oil with 10 c.c. concentrated sulphuric acid, which is added by means of a pipette, and the whole then well stirred with a thermometer for some minutes, the highest temperature being read off. With pure olive oil the rise is 42°, whilst with linseed it amounts to 103°.

Pharmacalia.

SULPHIDES AS FUEL.

MR. JOHN HOLLWAY produced a very important paper on February 12, 1879, on "A New Application of a Process of rapid Oxidation, by which Sulphides are Utilised for Fuel." His experiments attracted the attention of many of our ablest chemists, and the various points relating to the subject, supported as they were by analyses and elaborate calculations, were discussed in detail by those specially qualified to give an opinion. Favourable comment was made upon the researches of Mr. Hollway, and suggestions were offered bearing upon practical manipulation, recovery of by-products, and difficulties to be overcome. All concurred in expressing hopeful anticipation of ultimate success.

The inventor has recently drawn up an abstract of his proposal, so as to render it intelligible to the general reader. The combinations which make up the solid crust of the earth may be said to consist principally of compounds of the elementary bodies with oxygen, and compounds of the elementary bodies with sulphur. Iron in the state of sulphide, and known as iron pyrites, is one of the most abundant natural minerals. Copper, lead, and zinc, universally employed in the industrial arts, are likewise found as oxides and sulphides. "The importance of the subject may be estimated from the fact that 1,500,000 to 2,000,000 tons of pyrites are raised annually by the Rio Tinto Company, the Tharsis Company, and Messrs. Mason & Barry. Upwards of 600,000 tons of this quantity are imported annually to this country, and employed in the manufacture of sulphuric acid. About 1,000,000 tons are annually burned at the mines." Any method which could be devised to effect a more economical working of such vast operations, and of utilising waste products, is worthy of serious consideration, and must be of unusual interest in a chemical point of view.

Mr. Hollway's great object is to apply the heat generated by the rapid oxidation of certain mineral substances which have not hitherto been used as sources of heat for smelting operations—the heat thus obtained is utilised in the reduction of the furnace charge, which may be composed partly of sulphides and partly of siliceous ores. Rapid oxidation is effected by forcing a current of air through molten sulphides. Great heat is thereby generated, rendering the smelting a self-supporting operation, no fuel being required except that employed in raising steam from the blowing-engines. Where water-power is at hand, a little coke only is necessary to start the furnaces, which stand in the same relative position to the ores as wood does to coal in the lighting of a fire. Iron pyrites is sufficiently combustible to burn in the open air at a low temperature, the mass being raised to the temperature at which oxidation takes place, solely by the union of sulphur and iron with atmospheric oxygen.

In Spain, tons of poor cupreous pyrites, averaging about 2 per cent. of copper, are, for periods of several months, roasted in heaps in the open air; the copper is dissolved out and precipitated from the solution by means of iron. The gold and silver contained are lost, the iron and sulphur wasted, the latter passing into the air as an obnoxious gas, which desolates the country round for miles. Carbon, in fact, has for ages been deemed necessary for metallurgical operations, and constant thought has been bestowed on the best way of economising its employment. Even in the Bessemer process the carbon is only half burned, and a large amount of heat escapes with the carbonic acid and nitrogen. When, however, thin streams of air are forced through molten

sulphide of iron lying on a tuyère hearth, a high temperature is produced by the perfect combustion which ensues; nitrogen, sulphurous oxide, and sulphur vapour alone escapes from the surface of the molten mass. The hot nitrogen and sulphurous acid may be caused to act upon iron pyrites and other mineral matter, and when pyrites is thus heated, an atom of sulphur held in feeble combination is in great part expelled, and thus is obtained molten protosulphide of iron which is subsequently burnt by the oxygen of the air driven in at the lower part of the furnace, thereby producing the heat necessary for continuing the operation. All the ores of our chief heavy metals, except manganese and tin, are sulphides. Iron bisulphide is a type of sulphurous and combustible mineral. Associated with iron are found cobalt, nickel, copper, silver, gold, lead, zinc, and arsenic. In supplying air to such material, the iron is the first to suffer oxidation, and if that be arrested before the whole of the iron has been burnt, the cobalt, nickel, copper, silver, and gold present, all less readily oxidisable, will be found in the unburnt portion. Zinc is almost as combustible as iron itself; while lead and arsenic volatilise as sulphides; these three, therefore, may be collected in the sublimate, and antimony follows the same rule.

Originally, the possibility of carrying on the rapid oxidation of sulphides was tried in a Bessemer converter. But in that plant it was impossible to condense the sulphur which in the process ought to be saved. A cupola or blast furnace should be used into which a limited supply of air could be blown, thus bringing about the necessary oxidation and volatilisation of the sulphur which would be collected in the free state. The great value of the process would be lost were the sulphur not recovered. The corrosive action of the protoxide of iron formed on the siliceous lining of the furnace is mitigated, if not altogether avoided, by the addition of silica introduced with the pyrites in the original charge.

The process is peculiarly suitable for the treatment of metalliferous substances which cannot be treated advantageously otherwise—for the extraction of sulphur by distillation and simultaneous separation of other metals either in the form of regulus or sublimate; for the treatment of complex ores, auriferous and argentiferous pyrites, and for poor lead ores.

It is claimed that the more incombustible materials it is found impracticable to employ without too great a loss of temperature, the wider will become the application of the process. Many ores might be conveniently smelted by mixing them with a sufficient proportion of pyritous ores to effect their reduction. One of the chief practical questions concerned is how far it may be trusted to effect the smelting of ores or furnace charges containing comparatively moderate proportions of sulphides. As far as relates to the production of a regulus, the use of carbonaceous fuel will be almost entirely obviated. The main conclusions drawn from the experiments undertaken are that the whole of the oxygen of the air driven into a thin stratum of protosulphide of iron is utilised for oxidation; that by the heat thus evolved about one-half of the sulphur contained in iron pyrites is expelled in the free state, and that the remainder, save that left with the regulus, is chiefly evolved as sulphurous acid. The proportion of this acid to nitrogen is 14.9 per cent., which is a larger proportion than that obtained by copper smelters who manufacture sulphuric acid.

Other advantages have been enumerated on the way; it remains, therefore, only to state that the cost of plant is small compared with the quantity of material it would treat; and also on account of the additional profits derivable

from the new process. Not the least gain would be that the sulphurous acid evolved could either be oxidised into sulphuric acid in chambers, or reduced to sulphur by sulphuretted hydrogen; or, according to a plan suggested by Mr. A. H. Allen, large quantities of liquid anhydrous sulphurous acid could be produced from which sulphuric acid free from arsenic could be manufactured.

THE ALKALOIDS OF THE ACONITES AND VERATRUMS.

Messrs. Wright and Luff have, in continuation of their investigation of the alkaloids of the aconites, turned their attention to Japanese aconite roots. These appear to be of one kind, and differ in certain respects from those of *A. Napellus* and *A. Ferox*. From practical experiments they would seem to be richer in active ingredients, and therefore unsafe to be substituted for the ordinary kind of aconite root in pharmaceutical preparations. A careful examination performed on two batches indicated that the Japanese roots contain an alkaloid peculiar to themselves, and different from both aconitine and pseudaconitine, although closely allied to both, and especially to the former. The base obtained readily yielded a well crystallised nitrate, hydrochloride and hydrobromide, on simply stirring a pulverised crystal in a watch-glass with a dilute acid. Solution to a clear fluid at first took place, and on further stirring a crystallised magma of the respective salt was formed just as with aconitine.

It is proposed to term the crystallised base actually isolated ($C_{66}H_{83}N_2O_{21}$), japaconitine. It breaks up on saponification into benzoic acid and a new base ($C_{26}H_{41}NO_{10}$), japaconine. It is noticeable that a substance of the composition of the formula given for japaconitine might be supposed to be formed from a base $C_{33}H_{47}NO_{12}$ by the removal of water, thus, $2C_{33}H_{47}NO_{12} = 3H_2O + C_{66}H_{83}N_2O_{21}$, and that the hypothetical parent base only differs from aconitine ($C_{33}H_{43}NO_{12}$) by H_4 .

Experiments were made upon a third batch of roots by Wright and A. E. Menck, of King's College, and in this case no acid was employed to acidulate the alcohol used. The percolation was effected with plain alcohol by Messrs. Hopkins and Williams. The yield was considerably superior to that obtained with a good sample of *A. Napellus*, and the inference was drawn that Japanese roots are richer in crystallisable as well as in total alkaloids. "Whence, since the action of japaconitine on the skin appears to be much the same as that of aconitine and pseudaconitine, it seems highly probable that the Japanese roots will prove a more convenient source of crystallisable definite alkaloids than the roots now ordinarily used, the more so as japaconitine is more easily separable from the amorphous bases than is the case with pseudaconitine, which appears at present to be the active constituent of most of the commercial so-called aconitine."

It appears also that in isolating japaconitine there is an advantage in not acidulating the alcohol with tartaric or with a mineral acid, and probably the same remark applies to other kinds of aconite roots.

Messrs. Wright and Luff have also continued their investigation of the alkaloids of the veratrums, believing that the relationship of the crystallisable alkaloidal constituents of the different species is still an open question.

Veratrum album roots, according to the authors, contain at least five different alkaloids, of which three are well defined crystallisable, non-sternutatory bases; one amorphous, and non-sternutatory; and the last highly sternutatory.

1. Pseudojervine.—Formula: $C_{29}H_{43}NO_7$. Crystallises anhydrous: non-sternutatory, melts at 299°, forms a crystallisable sulphate and hydrochloride, sparingly soluble in

pure water; more soluble in presence of excess of acid and heat. Not saponifiable. This base gives a peculiar series of colours with cold strong sulphuric acid. Thus treated it dissolves to a yellow fluid which speedily becomes successively dark yellow, brownish-yellow, and the peculiar greenish-brown tint obtained when a somewhat stale solution of potassium ferrieyanide is mixed with ferric chloride. On standing a green tint is developed, passing from a lighter to a darker shade.

2. Jervine.—Formula: $C_{26}H_{33}NO_3$.—Not a dinitrogenous base: crystallises with $2H_2O$ or less in hot solution; its sulphate all but insoluble in water even when hot; hydrochloride and nitrate very insoluble. Anhydrous, it melts at 237° to 239° ; with sulphuric acid gives the same tints as pseudojervine. Not saponifiable.

3. Rubijervine: $C_{25}H_{31}NO_2$.—Crystallises anhydrous salts distinctly, more soluble than the above; gives with sulphuric acid an entirely different colour reaction. Non-sternutatory.

4. Veratralbine.—Probable Formula: $C_{28}H_{43}NO_5$.—Amorphous; non-sternutatory, non-saponifiable.

5. A minute amount of a sternutatory alkaloid yielding veratric acid on saponification, not improbably veratrine. Dr. Wright endeavoured to see whether the alkaloids contained in *V. viride* were in any way related to those isolated from *V. album*, and in particular whether the so-called viridine of Bullock was identical or not with jervine.

The roots examined contained a trace only of veratrine and veratralbine, and only a minute quantity of rubijervine, the alkaloids present being essentially jervine, pseudojervine, and cevadine, to which latter the sternutatory action is mainly due. All attempts to obtain crystallised cevadine from the amorphous sternutatory mass proved fruitless.

To the above enumeration of the alkaloids of the aconites and veratrums must be added the results of a former paper. Sabadilla seeds, when examined, yielded:—

1. Cevadine (veratrine of Merck): $C_{32}H_{49}NO_9$.—Yielding cevadic, methylerotic, or tiglic acid on saponification.

2. Veratrine (of Couerbe): $C_{27}H_{33}NO_{11}$.—Yielding veratric acid on saponification.

3. Cevadilline (in small quantity): $C_{34}H_{53}NO_8$.

HUXLEY ON EXAMINATIONS.

Just as the London season was on the wane, and the great societies closed their doors in concert with the great public schools, Professor Huxley distributed the prizes to the boys of the London University, and in so doing contrived to awaken an animated discussion. The *Daily News* devoted a leader to the subject, couched in terms by no means flattering to the speaker, who, in turn, published the full text of his discourse to prove that he was still a sane man and in the possession of his usual faculties. The main point was that examinations are not the sole test of excellence, and that many will be found to make their way successfully in after life whose names are not recorded in a prize-list.

We are always glad when this view is prominently brought forward by a distinguished man, for we are convinced that our present system, which is unavoidable, is a source of much discouragement to a large class of meritorious workers. All are not gifted with the power of rapid acquirement, or with a facility of rapid production of their knowledge. We can never state too strongly that honest endeavour always meets with its reward, and that reward is not the less real because not instantaneously perceptible. The Professor closed his observations with the enunciation of a truth which we should do well to treasure in our hearts, that personal character is in the long run more valuable than cleverness. The race is not always to the swift, nor the

battle to the strong. Character, which is the result of honesty of purpose, and of a continued determination to do that which is right, will lead infallibly to the happiest consequences; when mere cleverness, apart from character, will issue in disappointment. Enough of these disquisitions. Huxley never forgets to insist on the supreme advantage of a vigorous body and a healthy general constitution in the prosecution of intellectual studies. Indeed, it is on account of this doctrine that his philosophy has been called in question. His critics were not pharmacists evidently, for that esteemed body of men, slow to write essays, are quick in giving a practical bearing to their theories. They find that change of air and scene, and friendly intercourse with kindred spirits, are excellent promoters of that physical condition which best fits them for their several occupations. We believe pharmacy to have judged correctly, and we wish every member of the Society, and every friend whom he may meet at Sheffield, the utmost possible enjoyment of a well-deserved holiday.

The Pharmaceutical Council.

THERE was only a small attendance at the Council meeting on the 6th inst., the following eight members being absent:—Messrs. Churchill, Frazer, Greenish, Richardson, Robbins, Shaw, Slipper, and Squire.

AN UNWATCHFUL COMMITTEE.

Mr. Woolley made some comments on the fact that the Sale of Food and Drugs Act Amendment Bill did not seem to have attracted the attention of the Law and Parliamentary Committee. The President thought it had been mentioned, and also added that the promoters of the Bill had not attempted to introduce any clause specially affecting chemists and druggists.

GOOD TIMES FOR EDITORS.

Mr. Woolley further remarked that the increase of salary voted to the editor and sub-editor had not appeared in the report. He thought it should have been published. The President said it would become known to the members by means of the balance-sheet, and Mr. Williams said it was not mentioned because it arose out of the proceedings of a committee. Mr. Hampson said the report frequently contained mention of matters which occurred in committees. Subsequently 20*l.* was voted to enable the editor and sub-editor to attend the meeting of the German Pharmaceutical Association at Hanover.

THE INDIAN MUSEUM

In anticipation of the dissolution of the Indian Museum by the Government, it had been visited by the curator, and the president had written to the Hon. E. Stanhope asking that the Society should have a chance in getting some of the objects. His letter had been submitted to the Secretary for India. Mr. Schacht wished it had been within the province of the Council to protest against the course which the Government had resolved on in this matter.

ADDITION TO REGISTER

The name of Thomas Farren Humble had been added to the register, as having been in business before August, 1868, he having fulfilled the required conditions.

THE MUSEUM.

Among the contributions were reported 95 specimens of American drugs from the Philadelphia College of Pharmacy; a number of rare preparations from opium, coto bark, and paracoto bark from Dr. O. Hesse, and a number of specimens of essential oils from Messrs. W. J. Bush & Co., which had been used to illustrate a lecture given to the Students' Association by Mr. W. E. Bush. A shark's skin had been sent by Mr. Fresson, of Demerara, but it was not considered

suitable, and on the application of Mr. Bottle it was transferred to the Dover Museum.

LITERARY MATTERS.

Professor Redwood reported that his historical sketch of pharmacy was partially complete, and it was also stated that the index of the Journal from 1868 to 1878 was quite ready in manuscript. Questions as to printing these arose. Mr. Williams wished that a copy of each should be presented to every member and associate of the Society. Mr. Rimington urged that the books should be charged for, and Mr. Atkins suggested that they should be given to those who applied for them only. Ultimately the question was referred back to the Committee for further report, the printing of the historical sketch to be deferred until the manuscript should be complete.

Ten guineas were voted to the librarian to defray his expenses in attending the meeting of the Society of Librarians to be held at Manchester in September.

THE GAS ACCOUNT.

Professor Redwood reported that the cause of the late increase in the gas account was not due to any leakage, but seemed to be caused by the greater day pressure. Mr. Atkins and Mr. Woolley had both found a similar condition of things. The latter now used Carnaby's apparatus, by which he could regulate the supply at the meter down to a single burner, if necessary.

THE PHARMACEUTICAL CONFERENCE.

The Vice-President (Mr. Schacht) hoped the Council would honour the Conference by naming some of its members delegates to the forthcoming meeting. The President and such members as may attend were therefore requested to represent the Society.

PENALTY AND COSTS,

Amounting to 5*l.* 8*s.* 3*d.*, had been paid by William B. Mason, 14 Arcade, Briggate, Leeds, for infringement of the Pharmacy Act.

THE SESSIONAL PRIZES

Were awarded, after examination, as follows. The several professors had examined their own classes, and Messrs. Moss and Southall had conducted the examination for the Council prizes.

Chemistry and Pharmacy.

[Five months' course.]

| | |
|----------------------------|---|
| Bronze Medal..... | Thomas Horton |
| Certificates of Merit..... | { Henry William Drew William Herbert Hyatt George Wale William Inchle Gulliver |

[Ten months' course.]

| | |
|------------------------------|--|
| Silver Medal | James B. Lillie Mackay |
| Certificates of Honour | { Thomas Horton Edward Jarrett Eaton James Henry Allan |
| Certificates of Merit..... | { Frank Harris Alecock Henry William Drew |

Botany and Materia Medica.

[Five months' course.]

| | |
|----------------------------|---|
| Bronze Medal..... | Thomas Horton |
| Certificates of Merit..... | { Henry William Drew William Inchle Gulliver |

[Ten months' course.]

| | |
|------------------------------|--|
| Silver Medal | James B. Lillie Mackay |
| Certificates of Honour | { Thomas Horton Frank Harris Alecock Henry William Drew Edward Jarrett Eaton |
| Certificates of Merit | { James Edward Williams William Inchle Gulliver Fred. Wm. Ed. Shrivell James Henry Allan Percival C. Powrie Isaac Leach |

Practical Chemistry.

| | |
|-----------------------------|---|
| Silver Medal | Frank Harris Alecock |
| Bronze Medals | { Fredk. Walmsley Warrick Robert John Price Edward Jarrett Eaton James B. Lillie Mackay William Inchle Gulliver Beresford F. H. Maudson Thomas Horton |
| Certificates of Merit | |

Botanical Prize.

| | |
|----------------------------|-------------------------|
| Silver Medal | Thomas Frampton Perkins |
| Bronze Medal | Charles Walker |
| Certificate of Merit | William Francis Norman |

Council Examination Prizes.

Pereira Medal (silver); and Books value 5*l.*, presented by Mr. T. H. Hills.
Frank Harris Alecock.

Pharmaceutical Society's Medal (silver); and Books value 3*l.*,
presented by Mr. T. H. Hills.
Marshall Leigh.

Pharmaceutical Society's Medal (bronze); and Books value 2*l.*,
presented by Mr. T. H. Hills.
Henry Allen.

Jacob Bell Memorial Scholarships.

Eleven candidates competed, viz., in London, 8; Brighton, 1; Manchester, 1; Nottingham, 1.

The successful candidates were William Elborne and John Thomas.

REPORTING THE COUNCIL.

Mr. Symes moved the following resolution:—

That when any matter is considered in Committee during the Council proceedings, a record of the fact be stated in the Journal report of the Council proceedings, except under some special circumstances where the Council by vote decide that it is undesirable.

He wanted to see everything that took place in committee reported in name, though not in detail, leaving, however, to the Council the power to decide against reporting any special matter. The reports were not full enough to show the amount of work done by the Council. If the reports were fuller more interest would be excited among the members. The Council had to expend the money, not of wealthy men, and the members ought to have as much as possible for their money. The work done in committee was usually the most interesting, and he urged that the Council ought not to keep the most interesting parts to themselves.

Mr. Atkins seconded the motion with similar arguments.

The President had no objection to the motion. He then commented on the unauthorised reporting of *THE CHEMIST AND DRUGGIST*, and instanced a paragraph in last issue which he said, as there put, was altogether a misrepresentation of facts.

Mr. Hampson said the Council might prevent such error by admitting an unofficial reporter.

The President said the inference expressed in the words he had quoted could not be drawn from the official report.

Mr. Gostling felt very strongly the injustice of *THE CHEMIST AND DRUGGIST* report.

The President again remarked that the Journal report contained nothing to justify what appeared in *THE CHEMIST AND DRUGGIST*.

Mr. Rimington asked who had communicated that to *THE CHEMIST AND DRUGGIST*.

The President was unable to answer that question.

Mr. Williams was in favour of fuller reports. He recommended that a full note of the proceedings should be taken, and that some one or more persons should be entrusted with the responsibility of deciding what should be omitted. He suggested the President for the time being as the most suitable person for that responsibility.

Mr. Maekay agreed with the principle of the motion, but he thought Mr. William's suggestion the most impracticable that could be made. The man was not yet born who would take the office of President with the responsibility of revising the report and being called over the coals the next month about it. He recommended that the editor should have a seat at the reporter's table, and be himself responsible for what should appear.

Mr. Symes in reply said the only solution of the difficulty

which had been raised seemed to him that the Committee should on the spot decide how much of any discussion should be published. As to what had appeared in THE CHEMIST AND DRUGGIST he had at first thought that some one had been breaking faith in communicating it, but his second opinion was that the statement was only a deduction from the report, and this showed that more danger existed in those meagre reports and half sentences than in a full report.

Mr. Schacht asked what alteration in the existing state of things would result if the motion were carried, to which Mr. Symes replied that it would make a rule for what was now optional.

The motion was carried.

The next meeting of the Council will be held for the transaction of formal business, and it was stated that a quorum of members only would be necessary, and that these could be found in London.

Provincial Reports.

BELFAST.

HEAVY DAMAGES FOR WRONGFUL DISMISSAL.—An action, *Ross v. Cantrell and Cochrane*, was tried at Belfast on August 6, before Lord Justice Fitzgibbon. Plaintiff claimed 7,000*l.* damages for wrongful dismissal by defendants, in whose employment he had been as manager of their aerated water manufactory, in Belfast, at a salary of 1,000*l.* per annum. The engagement was to continue for 10 years, but plaintiff was dismissed at the end of three years in consequence of raising a complaint about the deficiency in the supply of corks by a Dublin house. The jury found for plaintiff, damages 3,250*l.*

BRADFORD.

A PETITION was filed on July 22, in the Bradford Bankruptcy Court, on behalf of Fletcher Atkinson Johnson, of Darley Street, Bradford, chemist and druggist, who estimates his liabilities at 1,500*l.*

CLECKHEATON.

A PETITION for liquidation was filed on July 22, in the Bradford Bankruptcy Court, on behalf of Thomas Edward Bentley, of Cleckheaton, drysalter, trading under the style of T. Bentley & Co. The liabilities are estimated at 1,600*l.*

LINCOLN.

CHECKING A FIRE.—A fire occurred on the premises of Mr. Gadd, chemist, Waterside South, on the evening of July 25, and had it not been for the presence of mind of Mr. Gadd a serious conflagration must have taken place. The errand boy, it appears, went into the cellar with a lighted lamp to draw some benzoline, and approaching too near with the lamp, a can of benzoline ignited. An alarm was raised, and Mr. Gadd rushed into the cellar, and carried the flaming can into the back yard, thereby saving the property from destruction, but sustaining serious burns about the face and neck.

MARLOW.

KEEN COMPETITION.—The following circular has been issued by a pharmacist of this town:—

THE PRINCIPAL PHARMACY.

Marlow, June 24, 1879.

SIR,—With a wish to meet the increasing competition in the prices of all classes of goods, I propose making a deduction of 10 per cent. on the accounts of those of my clients who please to discharge the amounts thereof per month. I beg to take this opportunity of expressing my thanks to you for the patronage you have given me, and to solicit the extension of your esteemed commands.

I am, sir, your obedient servant,

CHAS. M. FOOTITT.

A copy.

This gentleman, we are informed, had previously been selling patents at 10½*d.*, but we can hardly suppose that they

are booked for even a month at that rate, and then are subjected to the 10 per cent. discount.

NEWCASTLE.

A CHEMIST ROBBED.—At the Newcastle Police Court on July 24, George Wastell, *alias* Maudlin, was sentenced to six weeks' imprisonment for stealing an overcoat from Mr. Alder, chemist, New Bridge Street, Newcastle-on-Tyne. He was detected by Mr. Alder, whom he assaulted, and he also assaulted the constable who apprehended him. For the assaults he was sentenced to three months' imprisonment.

YORK.

POISONED BY MORPHIA.—On the night of July 11, William Chapman, artist, of Newton Terrace, York, aged 62 (subsequently found to be in a degenerated physical condition, with a very flabby heart), died after taking a dose of morphia. At the adjourned inquest held on July 16, Thomas Broom, chemist and druggist, Church Street, York, said the deceased called upon him about 10 o'clock on the morning of July 10, and asked for a little morphia. Witness said he would rather not let him have any, and asked whether deceased was in the habit of taking morphia. Deceased replied that for 20 years he had taken it as a sedative, and that he had last purchased it at Newcastle. Witness asked if he knew the colour of morphia, and deceased said it was a greyish-white, which was correct. Witness supplied him with 10 grains of the hydrochlorate, which he was putting in a bottle, when deceased said he would rather have it in paper. Witness told him that if he had it at all it must be in a bottle properly labelled, with the dose indicated. He gave it to deceased in the bottle with a red label, and directions for a dose of one-eighth of a grain. The label contained the word "poison," witness's name and address, and the dose. In giving him the bottle in paper, witness cautioned him against losing it. Deceased said he would take care of that, and would lock the bottle up in a small drawer where he kept other articles of the same description. Witness produced his "poison book," which deceased had signed on receipt of the morphia. Witness had known deceased for many years, and in June, 1869, Mr. Chapman purchased of him some prussic acid for use in painting. Richard Hewetson, surgeon, believed that death had been accelerated by morphia. Verdict, "Death by misadventure."

NOTES ON AROMATIC POWDER OF CHALK, &c.

AROMATIC powder of chalk and aromatic powder of chalk with opium are not among the most important of pharmaceutical compounds, nevertheless they are more prolific of annoyance to the dispenser and suspicion to the public than many more important preparations. It is not conducive, for example, to the equanimity of the one or the confidence of the other to be using a powder at one time in a state of very fine division, with probably a little dampness and of some considerable density, making it readily miscible with water, and at another a comparatively coarse powder, feeling gritty when rubbed between the folds of paper, light and dry, and with difficulty miscible with water. Nor are these feelings lessened if the powders present all the various shades of colour from a bright golden yellow to a dirty greyish brown, smelling strongly of the peculiar saffron aroma, and with very little aroma of any marked characteristic whatever. These varied conditions, existing as they do in the above powders, obtainable in the market at the present time, it need scarcely be pointed out, are owing in a great measure, though not entirely, as we will presently show, to the manner in which the ingredients are manipulated when being ground and mixed. If the ingredients are simply ground and mixed as directed in the Pharmacopœia the result will be the greyish brown product already spoken of, but if in process of passing through a mill a little rectified spirit be sprinkled over the ingredients the colour of the saffron will be developed, and the result will be the bright yellow referred to. Other manufacturers, however, adopt another plan still, namely, that of exhausting the saffron of its colour by means of water, adding the con-

centrated infusion to the chalk, drying, and then adding it to the other ingredients. This gives a product differing somewhat from the last, and we mention it here, not so much because of this as from the fact that we suspect we have in it the explanation of another variety still, to which it is the purpose more immediately of these notes to refer. If the saffron thus deprived of its colour be ground and mixed instead of the pure saffron with the other ingredients, the result will be a product much resembling that prepared strictly according to the Pharmacopœia process; and a somewhat lengthened observation leads us to suspect that this article will probably more frequently be met with than is generally credited. The sophistication is not readily discovered, not only because there is no direct method of estimating the purity of saffron, but also because the other ingredients present in the compound powders mask the absence of the colour of the saffron by yielding colour of their own in any wet method of examination which may be adopted. Moreover, the microscope, so useful in many other cases, here rather favours the deception, as it will reveal the presence of saffron, and apparently in proper proportion, although it cannot take account of the absence of its colour and aromatic properties. Three years ago we thought we had fallen on the test necessary to expose the fraud, in a paper read at the Glasgow Pharmaceutical Conference, in which it was stated that a very delicate test for saffron was hydrochloric acid and sugar. The test was to be used "by putting into a test tube a very dilute infusion of saffron. If no sugar be present add a crystal and as much dilute hydrochloric acid as will completely decolorise it. Bring the whole to the boil, and if the colour be due to saffron the yellow tint will be restored in a few seconds with a bright and extremely beautiful red fluorescence."

The test was promising and, indeed, extremely satisfactory on trial; too satisfactory, in fact, for, after further experiment, and diluting the saffron infusion to an attenuation that would have delighted the heart of even a rhabd homœopathist, the yellow coloration, as well as the bright and extremely beautiful red fluorescence, could still be produced. In short, the reaction was not caused by the saffron at all, but by the action of the acid on the sugar, and a very delicate test it proved for the presence of sugar in solution.

The statement in the foregoing directions, as to adding as much dilute hydrochloric acid as would completely decolorise saffron infusion, is a mistake, as neither hydrochloric acid nor sulphuric acid have the power of decolorising it, even when added strong and in considerable excess. Nitric acid is the only acid which has this power, and if it be added drop by drop to an aqueous infusion of saffron, the colour will be found to be discharged in a moderately equal ratio for given strengths of infusion, thus affording means of arriving at a very close approximation of the strength. On adding the acid a beautiful though fugitive green is also imparted to the infusion, which, so far as these experiments have been carried, is altogether characteristic of saffron. None of the other colouring agents which have been tried give this reaction, while some of them give very decided reactions of their own. Turmeric, for example, gelatinises, and ultimately precipitates a brown colouring matter, and this reaction is so delicate that if turmeric be present in a saffron infusion even in very minute proportion it will be detected. Chlorine water gives a very similar reaction with both substances, but in the case of the saffron the colour is not so quickly discharged as with the nitric acid, and therefore it is not so applicable for quantitative examination.

To apply the nitric acid test to the aromatic powder of chalk, &c., it must be done in the same way that the painter mixed his colours, namely, "with brains." This applies to most pharmaceutical operations, but to none more truly than to the examination of such substances as are under consideration, where everything depends upon the observation, skill, and experience of the operator. Experimenting first on a simple infusion of known strength, it will be noticed that there is a point at which a drop of the acid ceases to give the coloration, the same point being also indicated by the changing of the infusion from a dark red or yellowish red (according to the strength of the infusion) to a pale straw yellow. This is the proper point at which to stop, for although the addition of more acid will completely decolorise the infusion, the action is uncertain beyond this, as it requires both time and a large excess of acid to effect

the discharge of the colour. Taking next an infusion from the compound powders under consideration, the process and action is in every way the same, but a little more care is probably required in determining the exact point at which to stop the addition of the acid. Some of the other ingredients in the powders yield up their colour as well as saffron on maceration, and as this colour is not discharged by the acid it will tend, unless care be taken, to mask the point at which the acid should cease to be added. This will be avoided to a great extent if a cold infusion be prepared, saffron readily yielding up its colour in the cold, while the other ingredients, on the other hand, do not give it up so quickly or give it up only to a small extent.

SANITAS.

ONE day last month a number of medical and scientific gentlemen and others assembled at the works of the Sanitas Company (Limited) to see the process of manufacture of this interesting product and the perfected methods which have now been arrived at. We noticed first that the apparatus employed had been very largely increased since we last visited the works, and this and other indications combined to show that the public demand for Sanitas had considerably extended. Mr. C. T. Kingzett, F.C.S., explained the process of manufacture and the principles on which this is founded with all clearness. A continuous blast of hot air is forced through pipes carried through the building, and provided with sub-pipes conducting into 20 or 30 large earthenware carboys, each capable of holding about 100 gallons. These carboys each contain about 80 galls. of water, and 15 gallons of turpentine floating on its surface. The hot air is brought into the liquid at about the point where the water and the turpentine are in contact. The carboys stand in vats of hot water, which keeps their contents warm, and the air as it is discharged passes upwards through the turpentine, gradually oxidising it, and throwing down into the water certain soluble products of the decomposition. There is an aperture at the top of the vessel for the escape of the air. After continued action of this kind for about 300 hours, the water is fully charged, and becomes, after filtration, the liquid called by the inventor, Sanitas. According to the experiments which Mr. Kingzett carried out for some years on the oxidation of turpentine and essential oils, Sanitas would be mainly a solution of peroxide of hydrogen and camphoric acid. To these he considers it owes its antiseptic and disinfectant properties.

After a substantial luncheon provided in the company's works, Mr. Kingzett showed some striking experiments to prove the presence of peroxide of hydrogen in Sanitas, and afterwards handed round specimens of fish, meat, and other articles of food, some of which had been preserved for months by Sanitas; and he also took a piece of putrid meat, and, immersing it in Sanitas, passed it round to the company, who satisfied themselves that all disagreeable odour had been removed. Mr. Haviland, Medical Officer of Health for Northamptonshire, and other gentlemen present spoke highly of the advantages of Sanitas, and a letter was also read from the Duke of Manchester, who had promised to preside on the occasion, but was prevented by neuralgia, saying that he only accepted the position after he had satisfied himself by experiment of the value of the product.

PRESCRIBING AND DISPENSING.

THE *Medical Press and Circular* of July 23, after quoting a part of the recent judgment of the County Court Judge at Birmingham, in the case of the Apothecaries' Society v. Harrison, makes the following comments:—

"This decision, though conclusive that chemists and druggists never had, and have not now, any legal right whatever to advise and prescribe, is altogether unsatisfactory, because it is based upon the fact that the disease prescribed for in,

this particular case was of a serious, *not* of a trivial nature. It would seem to be inferred that a chemist may legally advise and prescribe for any patient who, at the time, is not 'seriously' ill. Such a judgment is a *reductio ad absurdum*, for how could either patient or prescriber form a decisive opinion as to the gravity of the illness; and a *fiction*, for how could any jury subsequently say whether the patient was 'seriously' ill when the chemist was consulted, or, on the other hand, was either convalescent from serious illness, or only in the first stage of dangerous disease? and how could the chemist himself draw a line between the 'trivial' cases for which he might legally prescribe and those more serious which he might not touch."

The same writer then goes on to summarise the report of the efforts made by the Rochdale Chemists and Druggists' Association, as described in our last number. He then adds:—

"We may, perhaps, give some strength to the movement by pointing out that the experiment of a complete separation of pharmacy and medicine has been tried on a gigantic scale with perfect success. In Ireland but very few practitioners in the large cities ever think of dispensing their own medicines; and, in the country districts, no one does so who can possibly supply his patients with their medicines in any other way; and yet the Irish practitioner is, on the whole, quite as well off as, and occupies a much higher social position than, his English or Scotch *confrère*.

"The time and freedom of mind which he gains by tabooing personal connection with the apothecary's shop more than compensates, in earning power, for the profits which he would make by making up mixtures, lotions, and pills, which the patient does not want, and he enjoys as his balance of profit to credit of the Irish system—the advantage of getting his fees cash down, keeping no books, furnishing no Christmas and Easter bills, and ranking as a gentleman if his demeanour deserves it.

"Utopian as the inspiration may be, we cherish the hope that eventually the medical practitioner will devote his skill to the consummate use of the tools which the pharmacist places in his hand, and that the pharmacist will content himself with producing those agents of the very best attainable quality, the Republic of Medicine being thus a co-operative compact between the parties who are now injuring themselves and each other by an unmeaning contention."

The *Lancet*, referring to the action taken by the Rochdale chemists in order to seek to induce the medical practitioners of that town to abandon the practice of dispensing medicine, says:—"We entirely sympathise with those who would separate dispensing and prescribing. But there are great practical difficulties, the removal of which, in our opinion, must rest chiefly with chemists, whose present charges would render the change simply impossible. The report declares that since the establishment of the Pharmaceutical Society respectable chemists have been anxious to confine themselves to their own work. We are glad to hear it. But, again, our actual experience is somewhat different, in seeing cases of a really grave character constantly tampered with by chemists."

MESSRS. EVANS, LESCHER & WEBB.

THE new building lately erected for Messrs. Evans, Lescher & Webb in Bartholomew Close, and now almost finished, is accurately represented in the accompanying engraving. It is a genuine specimen of the Queen Anne style of architecture, and its bright colour and lattice-windows contrast very agreeably with its sombre old neighbours in the somewhat un-Londonish old square which once formed the cloisters of the ancient church of St. Bartholomew hard by. The old warehouse in which the firm for so many years conducted their business was originally a dwelling-house, and had been fitted to commercial requirements *pro re nata*, but the building, which had stood since 1767, was hardly capable of being doctored into a modern drug warehouse, and on August 24 of last year the first blow at its structure was dealt, while on August 23 of this year the firm hope to re-establish themselves on their old site.

Perhaps a brief sketch of the inner arrangements of the new erection, which occupies nearly 9,000 superficial feet of ground, will not be uninteresting to readers engaged in the drug trade; and if we mention points of apparently trivial importance, it will be in the hope that some of the arrangements named may suggest conveniences of a like nature in other establishments, wholesale and retail.

The chief entrance is on the south side. A handsome octagon lobby leads direct into the region of the book-keepers and clerks, and here, as in all other parts of the building, the position and the architectural arrangements combine to give an exceptionally good light. The strong room is in connection with this department.

At the west front is a *porte cochère*, capable of receiving two waggons at the same time. These back under shelter, their stages being exactly on a level with the floor of the packing department, which is divided into "town," "country," and "export" sections. In the last-named are provided ranges of divided shelves, to receive the multifarious items of each order as they are collected from numerous sources. Large scales are also let into the floor here, in order that the weight of each case may be taken before it passes away to the waggons. The floor of the whole packing department is a wooden pavement, such as is now laid down in many of the London streets. Behind the packing department, also on the ground-floor, extends the wet-room, the dry-powder room, for such goods as are put up in wide-mouth bottles, and the essential-oil room. In every department is a desk for the head, from which a view of the whole of his territory is commanded. Attached to the wet department are a room for powerful poisons, and another room for analyses.

The basement is a good deal divided. Near the centre is the engine employed chiefly for working the lift, which traverses all the floors. The engine also furnishes the heating arrangements, and a drying cupboard for bottles. Near is fitted up a bottle-washing department. Some parts of the basement are devoted to packing heavy goods, and another part as the store for casks of oils. The latter is on a floor sloping towards the centre, where is a small well, so that, in the event of leakage or bursting of a cask, the oil would be recovered, and would be useful for lubricating purposes. In various parts of the walls fireproof vaults have been excavated, one for opium, another for quinine and essential oils, and another for the old books of the firm. A special room has also been constructed for the store of chloride of lime, and another, under a small yard, with special means of ventilation, for ether, chloroform, and acids.

On the first floor over the offices are the principals' rooms, with an interviewing room attached, and with electric bells and speaking-tubes to all the departments. The other parts of this floor are occupied by the store of patents and sundries, a large room for the bottling of oils and such-like operations by women, an annexe for the bottling of ammonia, and the oil-room. This latter is floored with lead, and is surrounded by a series of galvanised iron tanks, into which copaiba, castor, olive, cod liver, and other oils are continually filtering from tanks above, into which the original pipe is emptied. This room is provided with steam piping, so that the temperature may be raised in order to permit the filtration when the oils are too thick.

The second floor is chiefly occupied as the dry room, and is furnished with lines of bins, with the names of their contents printed on the outside, tared, and with movable tallies attached within to indicate the source of the supply. These bins are of such sizes that in almost all cases they will comfortably contain rather more than an original package, so as to avoid any ullage. A part of this floor is divided off by a glass partition, and contains starches, manna, and such articles as are liable to receive odours from other drugs. On this and other floors doors are provided in the counters to make orderly bins for the reception of all waste paper, string, and rubbish. As a part of the warehouse cannot be carried higher than the roof of the first floor, on account of the "ancient lights" of certain neighbours, the circumstance has been utilised for the purpose of making two or three flat roofs for bleaching oils.

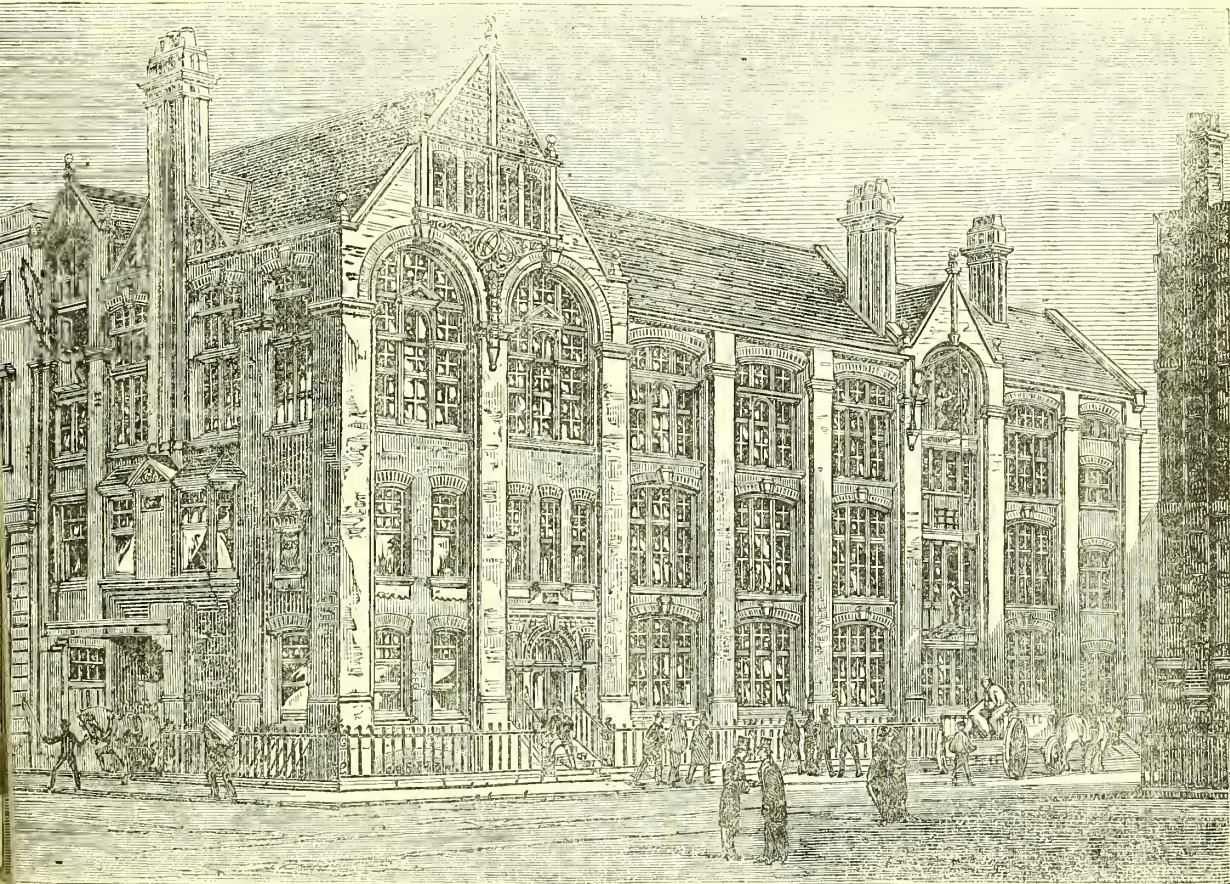
The third and fourth floors are used for storage of certain goods, and spaces are set apart for garbling gums, senna, and other drugs. There are also special departments for sponge and for aloes and gums.

Two lifts, two cranes, and a shoot have also to be mentioned among the furniture of these well-arranged warehouses. There are seven separate gas-pipes independent of each other, and hydrants in various parts of the building. The superficial area of the whole of the floors at Bartholomew Close is over 36,000 feet.

Though it has not reached its century, this firm has attained a very respectable maturity. Its origin dates far back in the present century—to a time when castor oil was imported in leathern dippers, when quinine was unknown in commerce, before the introduction of iodides or bromides, and before cod-liver oil had been introduced to medicine; years before the Pharmaceutical Society was thought of; when country booksellers sold patent medicines, and travellers rode their journeys on horseback, with their samples in saddle-bags.

Mr. John Evans, the founder of the house, worked, about the year 1820, for some time with Messrs. Kempson, Yates & Co., and afterwards joined them as a partner. The partnership was dissolved in a few years, and Mr. Evans joined a

Mr. Daniel Stable, and founded the firm of John Evans & Co. Mr. Stable retired soon afterwards, and in the year 1828 Mr. J. Sidney Lescher joined Mr. Evans, and subsequently the partners became connected through marriage. At this time the premises were at 62 Wood Street, Cheapside. A few years later they moved to 4 Cripplegate Buildings, and here the business was conducted till 1845, when it was removed to 58, 59, and 60 Bartholomew Close, a part of which premises had previously been the residence of Mr. Evans. The style of the firm had shortly before been altered to Evans, Lescher & Evans, Mr. T. Hilditch Evans, a son of the senior, having come up from the Liverpool firm. Mr. John Evans, the founder of the business, died in 1865, leaving a reputation of high integrity in the wholesale drug trade. His son, just mentioned, retired in 1870, but his place was taken by Mr. H. Sugden Evans, F.C.S., his brother, who also came from Liverpool. Mr. Sugden Evans had devoted much attention to the scientific side of the business, and after having served as Examiner for several years, and Vice-president, he



MESSRS. EVANS, LESCHER & WEBB'S NEW PREMISES.

was elected in 1869 President of the Pharmaceutical Society, and served as a juror for England at the Vienna Exhibition in 1873.

Mr. Lescher retired from active work in 1872, but still remains the senior partner in London. He was a member of the Pharmaceutical Council in its earliest days of difficulties and opposition, with Jacob Bell, Thomas Herring, and Peter Squire. Mr. Lescher has now reached the age of 55, and still retains the warm respect which he won from all who associated with him in business concerns. His son, Mr. F. Harwood Lescher, joined the firm in 1866. He was a Merit Medallist in 1868, and is the author of *Lescher's Elements of Pharmacy*.

In 1872 Mr. E. Alfred Webb, a grandson of the founder of the house, was admitted a partner, and quite recently his name has appeared in the style of the firm. Mr. Webb also passed through the curriculum of the Society, carrying off several of the medals in his year. He now takes an active part in the management of the business.

In the year 1833 Mr. John Evans and Mr. J. S. Lescher established a branch concern in Liverpool, from which Mr. Lescher retired two years later, in order that he might devote his energies solely to the London house. The late Mr. T. Bickerton Evans, the eldest son of the senior, took his place, and the style of the firm became Evans, Sons & Co., which has remained unaltered for the last 40 years, its

members to the third generation continuing interested in the London house. Mr. Edward Evans is now the head of the Liverpool house. As a magistrate for the county of Denbighshire, where he has a seat, this gentleman has secured respect beyond his business connections. Messrs. Evans & Co. have an agency in Paris and a branch concern in Montreal, Canada, which was established under the style of Evans, Mercer & Co. Three years ago this was changed to that of H. Sugden Evans & Co., under which name it now exists.

THE STORY OF THE CINCHONA CALISAYA LEDGERIANA.

THE following history is given in a Dutch journal, called *the News of the Day*, by K. W. Van Gorkom:—

Until a few years ago cinchona bark with a proportion of 5 per cent. of quinine was as rich as could be had. There was, however, a probability that there were in South America richer kinds than ever reached the European markets.

Between the years 1841–58 an Englishman, named Ledger, travelled over South America, commissioned by the Australian Government to buy alpacas. Among his attendants he had a faithful old servant named Manuel, formerly a Cascarillero, and well acquainted with many of the cultivators of the cinchona trees. Manuel explained to Ledger how difficult it was to obtain seeds of the best species, as both the authorities and the peasantry were very distrustful of foreigners, and they would use every means to mislead collectors—would change good seeds for bad ones, or would destroy the germs before supplying the seeds. He (Manuel), however, offered to obtain for his master, out of affection, a selection of seeds of the finest cinchonas.

Ledger had not found much success in the acclimatisation of the alpaca in Australia, and in 1865 he returned to Peru. There he met his old servant Manuel, who gave him a packet of cinchona seeds, which he had collected in the Bolivian province of Caupoliza. Ledger sent this packet from Africa in July, 1865, to his brother in England, who addressed himself to the English Government. But now arose a difficulty. Sir William Hooker was dead; his successor, J. D. Hooker, was absent through illness; and Markham, the famous traveller, who had first brought the cinchona trees from South America for the English Government, had lately departed for India. Fearing that the seeds might die, and all the trouble and expense involved in their collection be lost, a portion of the precious consignment was entrusted to the Dutch Government. On the advice of the late Professor Miguel the seeds thus offered were accepted, and the sum of 100 gulden was paid for them, on the condition that a small further premium should be paid if the seeds should prove to be living and the plants should turn out to be of a good sort. At the end of 1865 the seeds were in the hands of the chief of the Java cinchona plantations, and a year later a report was sent by him saying that 20,000 plants had been raised. The Dutch Government thereupon paid a further sum of 500 gulden, with which Ledger was fully satisfied.

The other half of the seeds sent by Ledger were purchased by a Mr. Money, and experiments made with them in British Indian plantations, but without bringing any noteworthy results.

During the months of November and December, 1866, about 5 or 6 hectares of land were planted out with the young cinchona plants raised from Ledger's seeds. In 1868 a disease broke out which caused much damage. Subsequently it was shown that this disease was occasioned by a small insect known as *Helopeltis Antonii*, the same insect as the one which attacks the tea-plant. It has been found impossible altogether to preserve the plants from the attacks of this insect, but its ravages have been checked to a great extent by watching with great care the young plants, cutting off those twigs which are affected. When the tree reaches a certain size and age it is not liable to much damage from this cause.

The little plants of 1866 had become in 1872 so far advanced that specimens of their bark could be submitted to chemical analysis. Up to this time nothing indicated

that the trees were different from the ordinary cinchona calisaya. They had not yet bloomed, but a slight diversity was to be observed both in the shape and colour of the leaves. The first specimen tested, however, indicated a greater percentage of quinine than had ever yet been obtained. At first it was supposed that this might be accidental; but further investigation proved that the first was a normal and not an accidental sample, and on May 27, 1873, the first supply of the new cinchona was sold at Amsterdam at 4.62*fl.* per lb., or double the price of the best South American bark.

Meanwhile some of the trees had begun to bloom, and it became evident that a distinct type of cinchona had been brought, which was now distinguished as *Ledgeriana*. Great care was taken to pick out the best plants for propagation, and the seeds of these were carefully preserved.

Of the 20,000 plants at first raised 8,000 died. The plantation of those that remained was thinned out every year, but always leaving stumps of the old trees, which will be fit for harvest in another eight years. By this means, up to 1877 inclusive, 9,200 kilogrammes of this bark had been collected, which realised, at Amsterdam, \$9,553.32*fl.* The 1878 harvest reached 4,200 kilogrammes, the value of which may be estimated at, at least, 30,000 gulden.

Millions of seeds have since been sown, both within and outside of the island.

In the Government plantations there are now, besides 6,300 mother-trees, 211,000 plants raised from seeds and 36,000 from cuttings, while in the propagation beds there are other 6,000 cuttings and 254,000 seedlings.

A cinchona speculation in Java is now quite a gold mine, if managed with the requisite skill and care. In most parts of the island a hectare of ground can be brought into condition for cinchona-growing for about 200 gulden, while the annual cost for maintaining it would not be more than 40 gulden. The expenses of gathering, packing, and freight to Europe would not average more than a gulden per kilogramme.

MADEIRA WINE FROM HONEY.

THE American *Druggists' Circular* translates the subjoined article from the *Pharmaceutical Zeitsch. für Russland*:—The following is a formula for making a wine from honey which can hardly be distinguished from the best genuine Madeira, and which is fit to be served on the table of a prince:—Mix in a clean copper kettle, scoured bright, 25 pounds of honey with 50 quarts of water (river water or rain water), heat slowly and remove the scum. After the liquid has been kept slowly boiling for half an hour, add three pounds of finely-powdered chalk or whiting while the liquid is constantly stirred. Remove the heavy scum which will be formed on the surface, and when no more scum appears pour the liquid into a wooden vessel and allow it to cool without disturbing it, so that the chalk may settle at the bottom. Pour off the liquid carefully, so that all chalk will remain behind, into the copper kettle, add six pounds of pulverised charcoal, and boil slowly two hours. Pour again into the wooden vessel, previously well cleansed, allow the liquid to cool, and filter it through flannel. Pour it again into the copper kettle, and heat it to boiling. Now take the white of 25 eggs, beat them with water to foam, and add this gradually to the liquid. In this manner the liquid will be perfectly purified, since the albumen of the eggs will draw any particle of charcoal and all other impurities to the surface, where it can be removed by means of a scum ladle. The chalk absorbs the acid and the charcoal removes the taste of wax. After the white of eggs has been added and the liquid has been slowly boiled, it is allowed to cool and then poured into a cask. The cask should not be filled entirely; a small empty place should be left, and the bung-hole be covered with a piece of clean linen to allow the liquid to ferment.

Clarified in the cask, and then filled in bottles, this wine will keep 50 years.

The quality of the wine depends greatly on the cellar in which it is stored. The cellar should have a temperature of about 35° Fahr. The bottles should be packed or stored in moist sand.

FORMULÆ OF SECRET MEDICINES.

Formulæ given below are translated (by special permission of the author) from a German collection compiled by Mr. Edward Hahn, Apotheker. The names following most of the Formulæ are those of the authorities quoted for the analysis. The weights are almost invariably given in metric denominations. A gramme is equivalent to 15½ grains. The prices quoted are the nearest English equivalents to the original retail price.

RAFTBRUSTMALZ—PECTORAL MALT (Joh. Hoff, Berlin).—Barley malt, powdered, and perfumed with anise oil.—*Isteiu.*

RAFTESSENZ—STRENGTH ESSENCE (Stanley).—For imbecility, whooping cough, dysentery, &c. With a pamphlet. A tenuous tincture of vanilla, galangal, zedoary, and similar essences.

RAFTGRIES—STRENGTH GROATS—FARINE CHOCOLATÉE SPHOREUSE (Theodor Timpe, Magdeburg).—As a substitute for woman's milk. A pale brown powder of agreeable taste and pleasant sweetish taste, resembling Nestlé's milk in composition, but containing in addition, cocoa of the finest quality. Analysis gives, per cent., moisture, 6.5; carbonaceous foods, 76.2; fibrine, fat, &c., 5.1; plastic nitrogenous matter, 10.1; ash, 1.8. Kraftgries is readily digested by children. Hager further indicates the ingredients:—Sugar, 35 per cent.; groats, 30 to 35 per cent.; starch, 10 per cent.; cocoa, 5 per cent.; colloids, 10 to 15 per cent. 115 grammes, 5*d.*—*Hager.*

RAFTPULVER (Dittman, Altona, afterwards Charlottenburg).—A specific for diseases of all kinds. 50 parts dry extract of oak bark are dissolved in 150 parts of water, 10 parts barley meal and 40 parts dextrose are added, heated, and evaporated to an extract, mixed with 50 parts of extract of bark, quickly dried and powdered.—*Hager.*

RAFTTINCTUR—CRAMP TINCTURE.—Spirit of juniper, 60 grammes; syrup, 12 grammes; tincture of cinnamon, 60 grammes, 1*s.* 6*d.*—*Oerbeck.*

OMŒOPATHISCHE KRAFTTINCTUR—HOMŒOPATHIC CRAMP TINCTURE (J. Gottschlich, Canther Bahnhof, Berlin).—An approved domestic remedy for colic, cramp of the bladder, and swellings in horses and cattle, for all troubles, caused by over-eating, in cattle and horses, and for diarrhoea in all domestic animals. The best quantity sold is three bottles, each containing a mixture of 5 grammes opium tincture with 14 grammes water and 11 grammes spirit. The recommendation of the author for nearly every disease of animals brings it within the class of secret remedy swindles. The dose is as follows:—For full-grown horses and cattle, 100; two-year-old foals and calves, 50; three months to year old foals and calves, sucking foals and calves, 15; swine, according to age, size, 10; goats, dogs, and cats, 5 drops. One flask, 1*s.* 3*d.*—*Hager.*

KRAKENHEIL—CURE-ALL—or “The means for lengthening human life, and of freeing and guarding it from all diseases. An infallible adviser in all diseases which it is possible to name.” This is the title of a pamphlet recommending Dr. Scott's Blutsaft. This is a turbid, greyish, semi-transparent liquid, weighing 220 grammes. It consists of spirit, 22; sugar, 60; vegetable acids (malic, citric), 1.2; gummy matters, 1.5; fixed oil, 1.3; glycerine, 8; water, 130 grammes. Probably sour, artificial, mixed with spirit, sugar, syrup of almonds, extract of orange, and possibly some cherry-juice. Pamphlet, 6*d.*; bottle, 3*s.*—*Hager.*

SPANISCHER KREUTZTHEE—SPANISH TEA OF THE CROSS. Cylindrical packets of 90 and 450 grammes. The mixture consists of star-anise and fennel seed, of each, 25; licorice seed, 20; coriander seed, 10; cassia bark, 25; figs, 50; poppy petals, 20; ground-ivy and hepatica, of each, 100; foot leaves, 80; china root and galangal, of each, 50; gentian root, 75; liquorice root, 60; sweet flag, 50; hawthorn, 100; sarsaparilla, 20; sea-sedge root (*carex maritima*), 5; hartshorn shavings, 70; Roman chamomile flowers, 100; cowslip flowers, 35 parts.—*Hager.*

KRINCHROM (J. Berthol, Paris).—For dyeing the hair. Bottle A. A solution of 1.25 grammes pyrogallie acid in 41 grammes of 45 per cent. spirit. Bottle B—Lunar caustic, 1.5 grammes, dissolved in 37.5 grammes distilled water, and 7.5 grammes ammonia.—*Hager.*

KRINCHROM (Karig, Berlin).—For dyeing the hair. Two fluids. No. 1 is a solution of 10 parts pyrogallie acid, in a mixture of rectified wood vinegar and spirit of wine, of each 500 parts. No. 2 is a solution of silver nitrate, 30 parts, in distilled water 900 parts, and ammonia sufficient to redissolve the precipitate.—*Hager.*

UNFEHLBARES KROPPMITTEL—INFALLIBLE CURE FOR SCROFULA (Widow Elise Büchner, née Groscurth, Arnstadt, Thüringen).—A glass filled with a rough grey powder, containing white particles, and weighing 28 grammes. According to the accompanying notice this powder is sufficient for 42 doses. Chemical analysis gives calcined sponge, 40 per cent.; sugar, 33 per cent.; mere-stone [steinmark], 27 per cent. Certainly a harmless powder, but faith must supply the greater part of its efficacy.—*Hager.*

KROPPPULVER—SCROFULA POWDER (F. W. Gruse, Berlin).—Common salt, 25; flowers of sulphur, 10; fennel seed, 25; juniper berries, 25; gentian root, 5; fennel seed, 5. 400 grammes, 9*d.*—*Hager.*

KROPPWASSER—FOR EXPELLING SCROFULA.—A solution of potassium iodide, 1 part; in water, 200 parts, sweetened with sugar, and flavoured with oils of cinnamon and orange peel.—*A. Schmidt.*

KÜHLWACHS—COLD CREAM, LIT. “COOL WAX”—**HEGERSALBE**—HEGER'S SALVE (Ed. Heger, Jauer).—For burns, frost-bites, cuts, &c. A small chip-box filled with resin ointment, or yellow cerate. 3*d.*—*Hager.*

BERLINER KUMYS (Julius Liebig).—For lung diseases. A milk-like fluid, consisting simply of milk-sugar dissolved in water, with a small proportion of the lactate and other salts of sodium, but containing no potassium or proteids.—*Kletziński.*

LACTIN (Gehrig & Grunzig, Berlin).—A so-called “prepared mother's milk” for children. It contains, per cent., moisture, 7.5; fat, 2.1; prepared barley meal, 35.5; cane-sugar, with a little milk-sugar, 48.2; casein, and albumen, 6.2. It can be made by evaporating 27–30 parts cows' milk; mixing it with sugar, 50 parts; and barley meal, 40 parts; drying and powdering. 100 grammes, 6*d.*—*Hager.*

SEER'S MITTEL GEGEN LÄMMERLÄHME—SEER'S CURE FOR LAMENESS IN LAMBS.—No. 1, a rough powder, consisting of sweet-flag root, 50 grammes; angelica root, 100 grammes; camomiles, powdered, 160 grammes; potassium sulphate, 60 grammes; green vitriol, 120 grammes; red and white bole, 60 grammes; sulphur vivum, 120 grammes; herb powder, 200 grammes; and hips, 15 grammes. No. 2, a fine powder, aloes, 8 parts; camphor, 1 part.—*Dr. Peters.*

LAIT ANTIPHÉLIQUE (Candes & Co., Paris).—A wash for freckles and other defects of the skin. Corrosive sublimate, 10 parts; sal ammoniac, 1 part; white of egg, 140 parts; lead sulphate [?], 7 parts; camphor, 2 parts; water, 840 parts. 160 grammes, 4*s.*—*Wittstein.*

LAIT ANTIPHÉLIQUE (Paris).—Another form. Consists of a solution of mercurous nitrate, mixed with camphor spirit. Part of the mercury is precipitated as calomel.—*Lauderer.*

LAIT DES PERLES.—A cosmetic. It consists of rain water, 120 grammes, with some mucilage in solution; white lead, 15 grammes.—*Dragendorff.*

DR. ROSA'S LEBENSBAISAM—DR. ROSA'S BALM OF LIFE (The Black Eagle Pharmacy, Prague).—An infallible cure for almost all diseases. It consists, approximately, of:—Aloes, 10 parts; myrrh, 4; rhubarb, 2; gentian, 2; zedoary, 2; galangal, 2; larch agaric, 2; saffron, 2; anise, 1; juniper berries, 1; theriac, 5; sugar, 3. Made into a tincture with spirit 200 parts, and water 100 parts.—*Hager.*

LEBENSSENZ—ESSENCE OF LIFE (Kiesow, Augsburg).—Rhubarb, gentian, and saffron, of each, 6; zedoary, agaric, myrrh, and theriac, of each, 8; aloes, 32; French brandy, 860 parts. 50 grammes, 1*s.* 3*d.*—*Etti.*

SALE OF FOOD AND DRUGS ACT AMENDMENT ACT, 1879.

THIS Act received the Royal assent on July 21. It runs as follows:—

Whereas conflicting decisions have been given in England and in Scotland in regard to the meaning and effect of section 6 of the Sale of Food and Drugs Act, 1875, in this Act referred to as the principal Act, and it is expedient, in this respect and otherwise, to amend the said Act: Be it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled, and by the authority of the same, as follows:—

1. This Act may be cited for all purposes as the Sale of Food and Drugs Act Amendment Act, 1879.

2. In any prosecution under the provisions of the principal Act for selling to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance, and quality of the article demanded by such purchaser, it shall be no defence to any such prosecution to allege that the purchaser, having bought only for analysis, was not prejudiced by such sale. Neither shall it be a good defence to prove that the article of food or drug in question, though defective in nature or in substance or in quality, was not defective in all three respects.

3. Any medical officer of health, inspector of nuisances, or inspector of weights and measures, or any inspector of a market, or any police constable under the direction and at the cost of the local authority appointing such officer, inspector, or constable, or charged with the execution of this Act, may procure at the place of delivery any sample of any milk in course of delivery to the purchaser or consignee in pursuance of any contract for the sale to such purchaser or consignee of such milk: and such officer, inspector, or constable, if he suspect the same to have been sold contrary to any of the provisions of the principal Act, shall submit the same to be analysed, and the same shall be analysed, and proceedings shall be taken, and penalties on conviction be enforced in like manner in all respects as if such officer, inspector, or constable had purchased the same from the seller or consignor under section 13 of the principal Act.

4. The seller or consignor, or any person or persons entrusted by him for the time being with the charge of such milk, if he shall refuse to allow such officer, inspector, or constable to take the quantity which such officer, inspector, or constable shall require for the purpose of analysis, shall be liable to a penalty not exceeding 10*l*.

5. Any street or open place of public resort shall be held to come within the meaning of section 17 of the principal Act.

6. In determining whether an offence has been committed under section 6 of the said Act by selling, to the prejudice of the purchaser, spirits not adulterated otherwise than by the admixture of water, it shall be a good defence to prove that such admixture has not reduced the spirit more than 25° under proof for brandy, whisky, or rum, or 35° under proof for gin.

7. Every liberty having a separate court of quarter sessions, except a liberty of a cinque port, shall be deemed to be a county within the meaning of the said Act.

8. The town council of any borough having a separate court of quarter sessions shall be exempt from contributing towards the expenses incurred in the execution of the principal Act in respect of the county within which such borough is situate, and the treasurer of the county shall exclude the expenses so incurred from the account required by section 117 of the Municipal Corporation Act, 1835, to be sent by him to such town council.

9. The town council of any borough having under any general or local Act of Parliament, or otherwise, a separate police establishment, and being liable to be assessed to the county rate of the county within which the borough is situate, shall be paid by the justices of such county the proportionate amount contributed towards the expenses incurred by the county in the execution of the principal Act by the several parishes and parts of parishes within such borough in respect of the rateable value of the property assessable therein, as ascertained by the valuation lists for the time being in force.

10. In all prosecutions under the principal Act, and notwithstanding the provisions of section 20 of the said Act, the summons to appear before the magistrates shall be served upon the person charged with violating the provisions of the said Act within a reasonable time, and in the case of a perishable article not exceeding twenty-eight days from the time of the purchase from such person for test purposes of the food or drug, for the sale of which in contravention to the terms of the principal Act the seller is rendered liable to prosecution, and particulars of the offence or offences against the said Act of which the seller is accused, and also the name of the prosecutor, shall be stated on the summons, and the summons shall not be made returnable in a less time than seven days from the day it is served upon the person summoned.

PARASITES.

(Concluded.)

I NOW come to those parasitic pests whose presence excites more disgust than any of the preceding, except perhaps the last-named strong-smelling bed-fellow. I allude to the louse family. As I have already mentioned, there are four species of the order Pediculidæ that are found associated with man either in conditions of health, dirt, or disease.

1. Crab louse, of the genus *Phthirus*. It is the only species of this genus. The body is of a dirty yellowish-white colour, beautifully shagreened with minute papillæ, the abdomen somewhat quadrate, thorax with a dark patch on each side, encircling a spiracle; the two anterior legs are designed for walking, whilst the two posterior pairs are furnished with powerful claws, and are used for climbing. The ova are firmly attached to the hairs by a glutinous secretion. The eggs are furnished with a lid, which allows the young to escape when sufficiently matured. They have never been found in the black races. They infest the hair of the pubic region, sometimes the axillæ, the eyebrows, and whiskers, as a rule, of persons of dissolute and dirty habits. Instances have been known of their appearing on persons whose habits are quite the reverse.

Exclusive of names of less note we find on the list of victims to this parasite those of Phereptima, as recorded by Herodotus, Antiochus Epiphanes, the dictator of Sylla, the two Herods, the Emperor Maximian, and Philip II.

A physician of the sixteenth century, named Amatus Lusitanus, speaks of a great Portuguese nobleman who was so covered with lice that two of his servants were constantly employed in collecting them and carrying them to the sea.

There are three kinds of *Pediculi*.

1. The Head-louse, *Pediculus capitis*.—It is cadaverous, ashy white, shagreened, and hairy; the eyes are large and prominent; the first six segments in the female have a broad, blackish margin; the male has only a black patch encircling each spiracle. Its habitat is the head, though it will at times wander over the entire body.

2. The body louse, *Pediculus vestimenti*, is wholly of a dirty white colour, shagreened with a few long stiff hairs. The head is more elongated than in the preceding (*P. capitis*), and the abdomen larger. It is also not nearly so common; its points of difference cause it to be readily distinguished. The species confines itself entirely to the body, never wandering to the head or other parts.

Denny says, "The sudden appearance of these creatures in vast numbers in places where they were not known before, and upon individuals previously free from such companions, is a circumstance not easily accounted for, nor have I ever heard of a plausible solution of the problem. This, like many other occurrences, has been viewed by the superstitious, and still is, as the prognostication of some impending evil." He knew of a case where this species appeared in such numbers that it was necessary to cleanse the bed linen twice a day for several days, in each of which visitations there appeared no sensible decrease in their numbers, though at last they suddenly disappeared.

Lice are hatched in the end of five or six days, and reproduce at the end of 18 days.

These creatures are not held in disgust by all nations. The Hottentots, some tribes of Western Africa, and some American tribes eat them, and are so well pleased with the dainty morsel, that they not only collect them themselves, but also employ their wives in the chase. They are called the Phthirophagi, or lice-eaters. Dr. Richardson informed Denny that during the overland expedition of Sir John Franklin he daily observed the Indian women cracking their parasites between their teeth, with much apparent enjoyment.

3. *P. tabescentium* is of a pale yellow colour. It has been described and accredited with being the cause of the louse distemper, or *Phthiriasis*, sometimes infesting Germany. It differs in its habits from the others in introducing itself beneath the skin.

Dr. Meredith Reece, M.D., in "Notes on Hospital Practice," *American Journal of Medical Sciences*, 1850, vol. x., makes mention of a patient who was not only covered with lice on every square inch of his body, but adds that they were continually issuing from the pores of his skin, beneath which they existed in incredible numbers. By scraping any part of his skin with a stick or any other solid substance hundreds of living lice would fall out of the abraded cuticle, and might be collected on a sheet of paper, as was several times done for exhibition to visitors. In other respects the man was in tolerable health, but so stupid that little of his history could be learned, and nothing of the duration of the disease. He was cured by the application of ung. hyd. nit. mit.

Leeuwenhoek, whose name is always associated with observations on lice, made his classical experiment by placing two female lice in a black silk stocking he wore for the purpose, and tightly gartering it on his leg. From the observations he made, he calculated that two females may in eight weeks be grandmothers, and see 10,000 lice of their own offspring; and, he adds, who can tell that in the height of summer, and under more favourable conditions, this number might not have been reached in half the time? Others have calculated that the second generation from a single individual might furnish 2,500 lice, and the third 125,000. But the normal reproduction does not proceed at this enormous rate.

Remedy for Jaundice (from *Notes and Queries*).—In a parish in Dorset, a few weeks since, the writer came across the following:—The patient is to eat nine lice on a piece of bread-and-butter. For the credit of the parish the animalcules were somewhat difficult of attainment, but after having been collected by the indefatigable labours of the village doctress, they were administered with perfect success.

I have to speak only of the two remaining species that live during the whole or greater part of their existence in the substance, or in the glands of, the skin.

1. The Itch Insect, *Sarcoptes hominis*, of the genus *Arachna*, order *Acarina*, family *Acaria*.

Its presence causes the well-known disease called the itch. The female measures only the $\frac{1}{100}$ to the $\frac{1}{75}$ of an inch, the male is about half that size, and is ten times more rare.

This creature is to be found, besides on man, in the horse, cat, dog, and mouse, and it has been found by Erasmus Wilson on the pheasant. It has been described as somewhat resembling the tortoise. It possesses eight legs, two pairs in front and a single pair on each side, posteriorly; they all take their rise from the under surface of the body. These limbs are very peculiarly constructed, the first ones in both cases resembling cones, attached by their bases, surmounted by two hairs and a long hollow tube, terminating in a round sucker. Each of the four hind legs of the female terminates in a long hair; in the male the inner two have suckers whilst the outer two have each a long hair. The head consists of two cutting mandibles in the form of scissors, behind which are one or two palpi, terminated by hairs. The ovary is distinct and generally swollen with eggs. When the female intends to penetrate the skin she raises her body almost vertically with the head downwards, and burrows at first in that direction. As soon as she reaches the lower layers of the epidermis her progress becomes easier, and her course is changed from the perpendicular to the oblique. In about 20 minutes she disappears altogether from the surface. At intervals an egg is deposited, which obliterates the passage and prevents her retracing her steps. When 40 or 50 eggs are laid she dies. A certain number of these eggs are

destroyed, and ordinarily 10 to 15 are found in each groove. The egg is enormous, compared to the size of the parent, at the moment of being laid measuring $\frac{1}{10}$ line in length; one is generally laid per diem. M. Foinville, speaking of the activity of these beings, says in 10 minutes one will go from the shoulder to the wrist, an immense distance for him, since it exceeds by 300 or 400 times his length of body. All proportions being kept it is the speed of a horse at full gallop. The itching occasioned by their presence is not of a painful character; it is so far bearable that James I. is said to have remarked: "The itch was fitted only for kings, the scratching being such exquisite enjoyment."

The history of their discovery is very remarkable. The itch is said to have been known to the Chinese 4,000 years ago. They called it Tchong-kiai, which means literally pustules formed by a worm. However that may be, Avenzoar, an Arabian doctor of the twelfth century, passes as the first who observed in the "itch" a small insect, "so small that one can scarcely see it, and which, hidden beneath the epidermis, only escapes after one has made a puncture." Rabelais speaks twice of the ciron of the itch. Ambrose Pare was more explicit:—"The cirons are little animals always hidden below the skin, under which they drag themselves, crawling and gnawing little by little, exciting an annoying itching rash." Scaliger, Androvandus, Mauffet, and, above all, Cestoni and Wichmann occupied themselves with the ciron of the itch. Notwithstanding these respectable authorities, and notwithstanding the pretty exact figures published in the *Acta Eruditorum*, 1682, and Geer, 1778, many doctors had not succeeded in seeing the animal, and considered its existence problematical. In 1812 Gales, of Belbèze, pharmacist of the hospital of St. Louis, published a dissertation on the itch, in which he asserts having observed more than 300 cirons, all having the same form, but some having eight and some six legs, which he attributed to a difference in the sex. He does not describe the animal, but gives a figure of it. The memoir of the pharmacist was warmly received, and the presence of an animalcule in the itch once more admitted. The figure published by this author was reproduced in books as the exact representation of the parasite of the itch for more than 15 years. Unfortunately the figure differed notably from the ciron described in earlier works, and doubts were cast on Gales' discovery of the animal in the pustule where it never exists. Alibert and Biett made numerous researches, but they were always negative.

Lastly, Raspail discovered that the figured animal was only the ciron of cheese. The existence of a parasite was once more denied. Lugol offered 300*fr.* as a challenge for anyone who would show him the itch insect. In 1834 F. Renucci, student of medicine and native of Corsica, clinical assistant of Alibert, proposed to extract and show in a séance the animalcule. The experiment was a complete success. It was proved that the ancients were right.

New we are brought to the last on the list, the *Demodex Folliculorum*. This is a very minute creature found, after puberty, inhabiting the sebaceous glands of the skin, and especially where it covers the cartilaginous portion of the nose and chin. There is, perhaps, no one free from the presence of this harmless parasite. These animals may be obtained by pressing out the contents of the follicles existing upon the sides of the nose, especially when they appear large and exhibit a terminal black spot. A drop of oil should then be added to the secretion, and the whole allowed to macerate for some hours at a gentle heat, or the secretion may be digested in a mixture of alcohol and ether to dissolve the fatty matter, and then treated with a solution of potash. It will contain young animals and exuvia.

In a full-grown insect is found a pair of circular suckers of equal size, and projecting on either side of the mouth, above as well as below. Each sucker presents from seven to nine depressions, to enable it to adhere. Attached to the under surface of the thorax are four legs: they are all alike, and have a single sharp curved claw. In motion it resembles a caterpillar, and can retract and expand its legs at will. The abdomen commences without any constriction at the thorax, and gradually tapers to the tail. Its lateral edges appear to be finely serrated, caused by transverse folds of the skin. The creature is extremely transparent. When found in the sebaceous ducts, the head is always directed inwards towards the gland, the tail being presented to the

aperture of the tube. It was discovered by Dr. Simon, a German physician, in 1842, and is sometimes called the *Acarus Simonii*.

What a strange and mysterious weaving together and inter-dependence of life the study of parasites affords! It is not the lower orders that alone are destined to afford nourishment and shelter to these forms of life: the highest, the most sensitive, and intellectual are equally liable. That they are apparently not necessary evils is evidenced in the fact that animals that are domesticated and civilised people are considered more blessed in their absence than in their presence. But it does appear that our bodies are necessary to them, as necessary as the world with its seed time and harvest, its seas and rivers, its clouds and sunshine are to us, and it is here that the lines of Pope seem to have a peculiar significance:—

"All are but parts of one stupendous whole,
Whose body nature is, and God the soul."

"To Him no high, no low, no great, no small,
He fills, he bounds, connects, and equals all."

WILLIAM ALLEN, F.R.S.

WE cannot doubt but that many chemists and druggists of the present day will read with interest the following sketch of the life of one of their most eminent predecessors, which we found in a recent number of the *City Press*.

Plough Court, Lombard Street, has a distinction in the minds of thousands of intelligent people far exceeding the glory of palaces, because there dwelt a friend of all men, a believer in the inherent goodness of mankind, and a labourer in all that tended to promote the present and future happiness of our race. A merchant and a chemist of renown, endowed with wisdom and power, he exerted all his faculties, his renown, his wisdom, his power, in efforts to raise the weak, to remove the scales of ignorance from human eyes, and to inspire the lowly with ever-rising hope. A memory of him, to one who fifty years ago received his commendation, is not likely to fade away, and it is a memory that is precious to many, very many, persons.

Charles Knight, in his "Passages of a Working Life," writes: "I have often called on him at his old place of business in Plough Court, where, a practical chemist, he had been a thriving tradesman and at the same time a fellow of the Royal Society, and a valuable contributor to its 'Transactions.' He well merited the honour of his countrymen for other qualities than his scientific acquirements. He was a liberal promoter of every public scheme of benevolence. He established schools of industry upon his estate at Lindfield, where agriculture and many useful arts were taught. He built cottages, formed a library, provided recreation, and shamed many a landowner out of his neglect. The memory of this good man is to me fresh and fragrant."

William Allen's father was a silk-worker in Spitalfields, and belonged to the Society of Friends, as did his mother, who carefully inculcated the strictest Christian principles into the mind of her son, and thereby moulded his character to the form it assumed: that form never changed. Religion was made attractive in their home; the Bible, and the society which diffused it, were dear to them; the restraints necessary in forming character were judicious and affectionate, so that restraint became agreeable. Residence at Spitalfields proving unhealthy for him, he was placed to school at Rochester, under Mr. Alexander, not for high study, for that was not to be had there, but to recruit and to ascertain the bent of his mind. He soon manifested a philosophic taste, particularly for chemistry and astronomy, which in his humorous way he describes: "Not being strong in cash, I bought an eye-piece and object-glass for a shilling, and then a sheet of paper, and for twopence: I made my tubes, adjusted my glasses, and to my delight Jupiter's moons were visible."

On returning home he worked with his father in silk manufacturing, which did not accord with his inclinations, and when an offer came in 1792 from Joseph Gurney Bevan, who admired the boy's talents and character, to

take him on at Plough Court (now Allen, Hanbury & Co.), he eagerly accepted, but—with the prudent piety of his order—not without much reflection. We find him keeping a diary and noting mental affairs with some morbidness. He thus made firm, however, the manly piety that characterised the whole of his life. When the Spitalfields Philosophical Society was started William Allen was among the first members, and the whole of them became distinguished men. "He was," says the Astronomical Society's obituary—a society that grew out of the Spitalfields Philosophical, and in its turn became the present Royal Astronomical—"connected with some of the nicest experiments of the day in conjunction with Davy, Babington, Marcet, Luke Howard, Dalton, Airey, and Faraday." It appears that Davy introduced him in 1807 to the Royal in connection with Mr. Haseldine Pepys, by reading Allen's paper "On the Quantity of Carbon in Carbonic Acid, and on the Nature of the Diamond," in which is proved the identity of the diamond with charcoal, that is, he demonstrated that the diamond was pure carbon. At this time he had been elected Fellow at the Linnæan, and subsequently Professor of Natural Philosophy at the Royal Institution; but this paper read by Davy, then secretary to the Royal Society, led to his being Fellow in that honoured institution in 1808, which Allen recognised by a paper "On the Changes produced in Atmospheric Air and Oxygen Gas by Respiration," illustrated by apparatus which he had constructed, and by drawings "made by one friend, Silvanus Bevan." This elaborate paper gives detail of 18 experiments. In the following year (1809) Allen and Pepys continued the subject of respiration (assisted by Henry Cline, a medical student, in certain data obtained from hospital experience).

Those early days of astronomical and chemical science are not 70 years gone by, and if the reader will but take up the contrast he will see what is due to the distinguished names above recited. Allen soon formed an astronomical library, and got about him the best astronomical instruments. His ardent nature found happy exercise in the alternation of Plough Court, the laboratory at Plaistow, and the observatory at home; and his shrewd practical nature made each equally successful in the return for labour bestowed. Lombard Street found him the money he took good care to earn and husband, by which these scientific pursuits could be profitably followed. He had among these apparatus a transit instrument, to use which he was compelled to arrange certain "Tables of the right ascension and declination of stars, &c., with the places of double stars." These made it easy to ascertain what stars passed the meridian, and when; it is, in fact, an elementary book leading to Piazzi's elaborate work—his "Complete List."

Engaged thus in trade, manufacture, and science, Allen did not forget what he deemed "the one thing needful"; it shines through all his life like a guiding star. In 1808 he put out a little tract from a provincial printing office (Swansea) entitled "Thoughts on the Importance of Religion," commending to us all habits of devotional exercises, reading the Bible, prayer, spiritual conversation, and meditation, which last he seemed to hold as listening to the voice of God. It is a tract of singular cheefulness, perfectly in harmony with the busy life he led; and, indeed, reveals the key of his power. He had tasted of human sorrow in losing his young wife, whom he dearly loved—one Mary Hamilton, of Redruth—and the shadow of that cross stretched forward on the path of his earthly pilgrimage, impelling him to tender deeds and kindly sacrifices for the good of others, and for the binding up of wounded hearts.

Here we retrace a little. Aske, whose name is well known, as commemorated in a society the which bore his name, and grew out of the Spitalfields society. Allen lectured there in 1801. In 1802 he became Fellow of the Linnæan; and, with Dr. Babington, lectured at Guy's, on "Chemistry." This led to his appointment at the Royal Institution, and his unrivalled power of chemical analysis and experiment, by which Plough Court acquired continental as well as British renown, gave him a prominent position in society. "All things," says one of his friends, "betokened a bright, if not a brilliant, career." It was an hour of conscious danger, and he writes: "If I am preserved from falling a victim to the world, its honours, and its friendships, I shall be inclined to think it a miracle of mercy."

But we must not omit extracts from his mother's letters to him in this the busiest period of his active life, when lecturing three and four times weekly at Guy's or elsewhere. "Thy talents, if rightly directed, would tend to spread heavenly knowledge, and to extend the government of the Prince of Peace." "I entreat thee again to consider the necessity of setting thyself more at liberty in future. Thou art too much absorbed in study, my beloved child; for, however innocent it may be, it fills up thy heart." Years after, when the lasting shadow drew over that loved Margaret (his mother), Allen writes: "I was affected, and told her I longed that we could go together . . . but she said, 'No, no, there is more for thee to suffer and to do yet; the Lord has a work for thee.'" We will see what that work was, and how it was done.

Allen had given much thought to the condition of the poor so far back as 1796, and was half-founder of the Spitalfields Soap Society, which in that time of terrible distress vastly relieved human suffering in that parish. There followed in 1798 another proposal, called "A Society for Bettering the Condition of the Poor," to which he adhered; but his personal labour he devoted to the former, and he worked as a visitor most arduously. It was at this time that Clarkson, the anti-slavery advocate, made his acquaintance, and Plough Court became his home when in London on anti-slavery business. In his memoirs much is said of Mr. Allen and his visits there; it was a friendship that ended only in death. Soon after, Wilberforce joined them, and of that man's death Allen writes, what would apply to himself:—"His philanthropy took its origin in love to God: it was kindled at the sacred fire of divine love, and it burned with such bright and steady lustre only because replenished from its hallowed source." The Society for Diffusing Information on the Subject of Punishment by Death originated at Plough Court in July, 1808, and from thence Montague engaged to seek Sir S. Romilly's advocacy, which was obtained. In 1813 we find him planning the establishment of savings banks in a letter to Richard Reynolds: "Hast thou turned thy attention to the subject of a bank for the poor, in which their little savings of threepence or sixpence a-week might accumulate for their benefit? I have consulted Morgan, the great calculator, and he is to sketch me a plan." In 1816 he records: "Charles Barclay, Charles Dudley, and Robert Stevens, met me at Plough Court, and we laid the first stone of the building."

Such a man could not escape the influence of the good-meaning but misguided man Robert Dale Owen; and there is no wonder that Mr. Allen was ensnared into investing capital in the Lanark Mills speculation. This caused him anxious years, chiefly on account of the gradual sinking of Owen's religious convictions, until he reached a position of infidelity, from which the soul of Allen recoiled with intense sorrow and antipathy. Ultimately he freed himself, but at great risk and suffering.

It is pleasant to notice the spontaneity with which Mr. Allen aided the transference of Lancaster's affairs into the formation of the British and Foreign Schools Society, of which he became treasurer in 1808, and held the office more than thirty years, advancing money when the enterprise flagged, and devoting time unsparingly to get the good idea free from Lancaster's deteriorating influence. School meetings, provincial tours, lecturing on popular Scriptural education, alternated with his unceasing chemical, experiments, the work of managing a rapidly extending business, and his many social engagements, almost to the breaking down of his health and spirits. "My faith is almost exhausted, and yet I can humbly say, in the multitude of things which harass my mind, the main object is the good of others; for this I have in great measure given up my own gratification, for if, instead of these things, my time were given up to philosophical pursuits, to which I am naturally prone, the path of honour and distinction stands fair before me." Of honour and distinction philanthropy brought him much. The Dukes of Kent and Sussex soon found in William Allen a friend whose business counsel, as well as high administrative qualities in social economy, they highly prized and freely employed. Out of this habit of visiting Brighton grew a desire to be freer from the cares of commerce, and to be at more liberty to "make an inroad upon the present demoralising system of paying agricultural labourers out of the

poor's rate, by building cottages for them and giving them some land." And this desire he determined on turning into practice, at least as an experiment.

Sussex contained some choice spirits at that time—and does now also—but at Lewes and the neighbourhood dwelt a few large-hearted, public-spirited men who would do or dare aught that science and philanthropy would suggest. With these William Allen became identified, and from the association results were obtained that reach us; and will continue to extend. Dr. Mantell, Messrs. Henry Brown, J. Crosskey, and others beside him, were of the original committee of the Society for the Diffusion of Useful Knowledge, from whence came the "Penny Magazine" the "Penny Cyclopaedia," and all Charles Knight's wonderful productions.

In his desire to raise the social condition of the poor he purchased an estate at Lindfield, a village some seven miles from Brighton and Lewes, and there he realised his cottage schemes. In 1825 he built his schools and workshops, engaged three teachers, and formed a lending library. The boys learned farming, printing, carpentry, and other arts; and the girls needlework and knitting; the infants sang, were made happy, and by way of usefulness learned to plait straw. Out of those labours he derived domestic and intellectual happiness, which continued to the end of his days. His experimental effort induced a neighbour, Mr. Smith, to take 100 acres, and add it to the Lindfield land; and the wisdom thus acquired resulted in the formation of that useful institution, the Society for Improving the Condition of the Labouring Classes, which continues and prospers to this day. Those who would like to investigate this part of Mr. Allen's labours should refer to the minutes of the Select Committee on the Lindfield Schools of Industry.

On his most interesting journeys it would be most agreeable to dwell; they are more fit for the lecture-room than an outline biography. Sweden, Norway, and Russia felt, and feel to this moment, the benefit of that journey, so rich is it in incident, suggestion, and remedial measures in regard of prisons, habits, culture, creeds, and insight of human nature in the emperors, kings, ministers, middle and labour classes. His having a cargo of Bibles over and getting them accepted showed the mighty force of his influence on the supreme autocratic circle of Russia. His letters of courtesy abound in faithful exhortations addressed to monarchs with the freedom of a prophet and the tenderness of love and sympathy. The journey into Spain had more of a religious character, as did his visits to Ireland, but in the latter place he contended much for the improvement of popular education. Indeed, his educational efforts were almost sublime. From the time he took up with Joseph Lancaster's ideas, which were good, and his management, which was to the greatest degree foolish and imprudent, Mr. Allen had a continual anxiety. For instance, the British and Foreign School Society, which resulted from that cause, soon became deeply involved in debt. He laid hold of the reins, found that 12,000*l.* were wanted to make it safe, went vigorously to work, enlisted the Duke of Kent for chairman, stumped the country and ransacked London, had a large meeting at Shadwell of a thousand people, and another at Freemasons' Hall of the "Upper Ten," and in two years the ship sailed in smooth waters. That glorious institution owes its inspiration and its success primarily to his labours, in which toils he had much help from Joseph Forster, the father of the member for Bradford, and parent of modern School Boards—a wise counsellor, whose mantle has fallen upon a worthy son. The writer remembers his journeys, his Lindfield labours, his ever active, bright, courageous Christianity, and knows that it is not too much to say that the popularity of the Duke of Kent was almost derived from the countenance he gave to the far-seeing benevolent statescraft—in matters affecting the mass of the people—of William Allen, who died at Lindfield on December 30, 1843. His end was indeed peace.

THE following advertisement for an assistant appeared in *Pharmaz. Zeitung*:—"A young man, not wholly without means, can find an agreeable situation in a country drug store, &c., &c. He might possibly, by marrying in the family, become a member thereof, and his future subsistence be secured thereby. Applicants must send in their photographs."

ARTIFICIAL FRUIT ESSENCES.

PROFESSOR MAISCH has recently compiled the following particulars respecting the preparation of artificial fruit essences:—

Fourteen years ago Kletzinsky published formulæ for fifteen different fruit essences, which in 1867 were republished by several journals. Several of these formulæ were again produced in the last volume of the *Confectioners' Journal* without any alterations, except that in the essence of apple the quantity of oxalic acid was reduced from 1 to $\frac{1}{2}$ part, and glycerine from 4 to 2 parts; in essence of raspberry, the succinic acid was entirely omitted, and essence of peach was directed to be made of 2 oz. of oil of bitter almonds, 1 oz. of acetic ether and 2 pints of alcohol, but the latter product has evidently the flavour of peach kernels accompanied by a slight fruit odour. The flavour of peach fruit may be imitated by using 5 parts each of acetic, butyric and amylacetic ethers, $\frac{1}{2}$ part (or less) of methyl-salicylic ether (oil of wintergreen), 2 or 3 parts of oil of bitter almonds, and 80 or 100 parts of alcohol.

Kletzinsky's formulæ for the extracts of strawberry and raspberry are much improved by adding from 20 to 10 per cent. of tincture of orris root. If desired, the rather acid taste of this tincture may be removed by precipitating the resin, and if solution of acetate of lead is used for this purpose the filtrate should be carefully freed from any excess of lead by sulphuretted hydrogen, or by agitation with solution of sulphate of sodium, which salt, being insoluble in the alcoholic liquid, will not impart to it its peculiar saline taste. The tincture of orris may probably be conveniently replaced by an alcoholic solution of the oil of orris, which has been an article of commerce for some years past.

Since several very important errors had crept into the formulæ of Kletzinsky as published in 1867, some of which are, however, readily corrected, it has been thought best to republish all the formulæ from Wittstein's *Vierteljahrsschrift*, xvi., p. 263.

These formulæ are given in *parts by measure for 100 parts of alcohol*, and whenever acids are used they are to be previously dissolved in alcohol.

Essence of Apple.—Aldehyd, 2 parts; chloroform, acetic ether, nitrous ether and oxalic acid, each 1 part; glycerine, 4 parts; amyl-valerianic ether, 10 parts.

Essence of Pear.—Acetic ether, 5 parts; amyl-acetic ether and glycerine, each 2 parts.

Essence of Cherry.—Benzoic ether, acetic ether, each 5 parts; glycerine, 3 parts; cœnanthic ether and benzoic acid, each 1 part.

Essence of Black Cherry.—Benzoic ether, 5 parts; acetic ether, 10 parts; oil of persico (peach kernels) and benzoic acid, each 2 parts; oxalic acid, 1 part.

Essence of Peach.—Formic ether, valerianic ether, butyric ether, acetic ether, glycerine, and oil of persico, each 5 parts; aldehyd and amyl alcohol, each 2 parts; sebacylic ether, 1 part.

Essence of Apricot.—Butyric ether, 10 parts; valerianic ether, 5 parts; glycerine, 4 parts; amyl alcohol, 2 parts; amyl-butyric ether, chloroform, cœnanthic ether, and tartaric acid, each 1 part.

Essence of Plum.—Glycerine, 8 parts; acetic ether and aldehyd, each 5 parts; oil of persico, 4 parts; butyric ether, 2 parts; and formic ether, 1 part.

Essence of Grape.—Cœnanthic ether, glycerine, each 10 parts; tartaric acid, 5 parts; succinic acid, 3 parts; aldehyd, chloroform, and formic ether, each 2 parts; and methyl salicylic ether, 1 part.

Essence of Currant.—Acetic ether, tartaric acid, each 5 parts; benzoic acid, succinic acid, benzoic ether, aldehyd, and cœnanthic acid, each 1 part.

Essence of Strawberry.—Butyric ether and acetic ether each 5 parts; amyl-acetic ether, 3 parts; amyl-butyric ether and glycerine, each 2 parts; formic ether, nitrous ether, and methyl-salicylic ether, each 1 part.

Essence of Raspberry.—Acetic ether and tartaric acid, each

5 parts; glycerine, 4 parts; aldehyd, formic ether, benzoic ether, butyric ether, amyl-butyric ether, acetic ether, cœnanthic ether, methyl-salicylic ether, nitrous ether, sebacylic ether, and succinic acid, each 1 part.

Essence of Pineapple.—Amyl-butyric ether, 10 parts; butyric ether, 5 parts; glycerine, 3 parts; aldehyd and chloroform, each 1 part.

Essence of Melon.—Sebacylic ether, 10 parts; valerianic ether, 5 parts; glycerine, 3 parts; butyric ether, 4 parts; aldehyd, 2 parts; formic ether, 1 part.

Essence of Orange.—Oil of orange and glycerine, each 10 parts; aldehyd and chloroform, each 2 parts; acetic ether, 5 parts; benzoic ether, formic ether, butyric ether, amyl-acetic ether, methyl-salicylic ether, and tartaric acid, each 1 part.

Essence of Lemon.—Oil of lemon, acetic ether, and tartaric acid, each 10 parts; glycerine, 5 parts; aldehyd, 2 parts; chloroform, nitrous ether, and succinic acid, each 1 part.

The different manufacturers of artificial fruit essences doubtless prepare them by formulæ of their own, and this explains the difference in the flavour, which is particularly noticeable on largely diluting them with water. If the essences have been prepared with a dilute alcohol their odour is more prominent, and they are apparently stronger; but on mixing a small quantity with a large quantity of water in given proportions, the true flavouring strength may be better discerned.

A fruit essence which is much employed in the United States is *essence of banana*; it consists usually of butyric ether and amyl-acetic ether, equal parts, dissolved in about 5 parts of alcohol.

The red colour of strawberry and raspberry essence is produced by aniline red (fuchsin), the bluish tint of which is conveniently neutralised by a little caramel. If caramel alone is used for colouring essences a yellow or brown colour is obtained, according to the quantity used.

The *Confectioners' Journal* gives formulæ, also, for the following essences:—

Essence of Blackberry.—Tincture of orris root (1 to 8), 1 pint; acetic ether, 30 drops; butyric ether, 60 drops.

Essence of Nectarine.—Extract of vanilla, 2 parts; essence of lemon, 2 parts; essence of pineapple, 1 part.

NOTES ON TOBACCO.

By W. K. GLOVER.

(Read at an evening meeting of the Chemists' Assistants' Association, April 9, 1879.)

THESE notes will, I trust, convey to you in a somewhat condensed form the history of tobacco. I have arranged them under different headings, which I thought would render them more concise.

Botanical Origin and Description.—The official tobacco plant, *Nicotiana tabacum*, belongs to the order Solanaceæ. It is an annual, growing 6 feet high, having alternate oblong lanceolate sessile leaves (those on the stem being semi-amplexicaul and decurrent), with dingy red funnel-shaped flowers. The leaves are clothed with short hairs, which exude a viscid fluid, giving a waxy feeling when touched.

By cultivation the leaves assume various shapes—cordate, ovate, &c. It thrives in most temperate and sub-tropical countries, but succeeds better in some localities than others, e.g., the United States, Virginia being the most celebrated for its growth. Cuba, Havannah, and Manila are likewise known by their special growths.

Cultivation.—The method of raising the plants in America is as follows:—The seeds having been sown in beds, and germinated sufficiently, are pricked out as soon as they are able to be handled, and allowed to gain five or six leaves (exclusive of the seminal leaves). They are then transplanted, during the month of May, into the fields, which have been previously much manured, as tobacco is a very exhaustive

crop. The plants are placed 2 or 3 feet apart in rows. In growing, the roots have a tendency to appear above ground, as is the case with Indian maize; the earth, therefore, is from time to time heaped round them. When nearly full grown the tops are pinched off, to prevent development of flowers and seeds, and to promote the development of leaves.

The harvest takes place in August, the mature plants are then cut off above the roots and placed in heaps, under cover, and allowed to "sweat" for three or four days, after which they are hung in airy sheds to dry. They are then submitted to a similar process for one or two weeks, and while slightly moist, the leaves are stripped and packed for exportation. In the above process of preparation, tobacco leaves appear to undergo a kind of fermentation, by which important chemical changes take place in their composition, one of the most evident being the formation of some new volatile principle, for the heavy narcotic odour in the dried leaves is wanting in the fresh ones. In drying the leaves become brittle, and as thin as paper, the colour varying from a bright yellow to a dark, and they lose 88 per cent. of water.

It is a singular fact, but established beyond doubt by frequent experiment, that while change of soil and climate effects little alteration in the botanical character of this plant, it makes a great difference in its chemical composition; so far, at least, as depends upon its mineral constituents. The conditions of soil and climate which favour the production of nicotine are precisely those which are unfavourable to its valued aroma. A given variety of tobacco will either be strong with slight aroma or highly aromatic and weak in nicotine, according to the soil and climate in which the plant is grown. The whole course of rearing and curing tobacco is a system of applied science, and one in which the planter has to use incessant watchfulness; the slightest error in drying, in time and extent of fermentation, &c., may spoil a whole crop. The cultivation of tobacco has been prohibited in England since 1652, not more than half a pole ($15\frac{1}{2}$ square yards) being allowed "in a physic or University garden, or in any private garden for physic or chirurgery." This Act did not extend to Ireland, and previous to the year 1830 it was grown there to a considerable extent.

History.—It is supposed to have been known from time immemorial to the inhabitants of Central and South America, and was unknown in the old world before the discovery of that continent. It is said to have been discovered by the Spaniards in 1492, when Columbus and his companions landed at Cuba and saw the inhabitants smoking cigars. Another writer states that the Spaniards discovered it at Yucatan in 1520, when it was called "petum" or "petum." It was sent by them from Tabaco, or Tabasco, a Mexican province, to Spain; hence its name. Humboldt asserts that it derives its name from the Haytian word "Tabaco," for the pipe in which the herb is smoked, and which has been transferred from the instrument to the plant. There is no doubt that the tobacco is a native of some part of South or Central America, but the precise country of its origin cannot now be determined. The genus, *Nicotiana*, derives its name from the French ambassador, Jean Nicot, at Lisbon, who was the means of introducing the tobacco plant into France, about 1560. In the reign of Henry III. of France it was called "l'herbe à la reine," in honour of Catherine de Medicis. The Rue Jean Nicot in Paris, running in front of the Manufacture de Tabac, is named after the ambassador.* Its introduction into England was made in 1586 by Sir Francis Blake, from Virginia, where an English colony had remained for a year. The colonists are said to have brought tobacco with them on their return, and to have introduced into this country the practice of tobacco-smoking, or, as it was first called, tobacco-drinking, the first methods of imbibing the fumes being by means of a walnut shell and a straw. Sir Walter Raleigh and other young men of fashion gave it every encouragement by smoking themselves, and the habit was soon acquired by the English, as it had previously been by the Spaniards. The practice of smoking since that period has become by degrees almost universal amongst nations, despite all the efforts of

their rulers at prohibition. The priests and sultans of Turkey declared smoking to be a sin against their holy religion, yet the Turks and Persians became the greatest smokers in the world. In Russia, the smoker was threatened with the knout for the first offence, and with death for the second, yet the Russians are now constantly with pipes in their mouths. In our own country James I. wrote a book against it, entitled "Counter-blast to Tobacco," but instead of checking, it rather tended to promote the spread of the habit among his subjects. Finding no penalties, however severe, could check indulgence in this luxury, sovereigns and their governments soon found it much more advantageous to turn it into a source of revenue; and the cultivation and manufacture of tobacco were gradually subjected almost everywhere to fiscal regulations, restrictions, or monopolies, which still prevail in various forms over the greater part of Europe. During the early part of the reign of Charles I. the trade was monopolised by the Crown. This monopoly was not of long duration, and totally ceased at the breaking out of the Civil Wars. In France, Spain, and Austria, and other countries, the trade is still in the hands of the Government. The duty in foreign countries on manufactured tobacco never exceeds 3*d.* per pound, and in Belgium it is only a $\frac{1}{4}$ *d.*, while in England it is 3*s.* 6*d.*

Consumption.—It has been recently estimated that the average in this country is about $1\frac{1}{2}$ lb. per head, in Germany 6 lbs., and in Holland more money is said to be spent in tobacco than bread. According to the *Statistical Journal*, 1872, the quantity of tobacco consumed by two generations of Britons was 1,280,094 tons, of the value of 578,039,811*l.*

Revenue.—The revenue derived from tobacco duty last year was 8,750,000*l.*, or one-tenth of the whole revenue of this country. The duty paid by manufacturers ranges from 5 to 30 guineas, according to the quantity produced. The regular dealer's licence duty is 5*s.* 3*d.*

Manufacture, &c.—A visit to the tobacco warehouse, Victoria Docks (a building of vast dimensions, having no less than 15 acres of floorage), will at once give you an idea as to what extent tobacco is used. Over 20,000 hogsheads, each holding about 1,200 lbs., may be seen waiting buyers, besides packages and bales, weighing in all between 17,000 and 18,000 tons. When a case is opened, the whole of the covering is removed, so that the purchaser may see if the contents are in any way damaged by bad packing, sea-water, &c., when, if such be the case, the part deteriorated is cut off by the Custom-house officers, as no tobacco of any description is allowed to be removed till the full duty has been paid; the waste, which is sometimes very large, being consigned with the sweepings of the warehouses and impounded smuggled tobacco, to the "Queen's Pipe," a kiln built for the purpose. The process of manufacture is as follows:—The leaves, which are generally imported in "hands," that is, several leaves being tied together at their bases, are carefully separated, after being moistened. Some leaves take up larger quantities of water than others; the poorer the leaf, such as Java, the more absorbent (36 per cent.); the richer the leaf, such as Virginia, the smaller the quantity (12 per cent.). In this country, water alone is allowed by the Excise. It is generally boiling when applied. The leaves are then heaped together and allowed to undergo a slight amount of fermentation. On the continent the addition of certain salts and sugar is allowed. The liquid, when prepared, is called "sauce." The process of cutting is accomplished in a machine somewhat resembling a chaff-cutter, the leaves being introduced through a trough between rollers, by which it is very firmly compressed. The knives, working in unison with the rollers, make about 300 cuts a minute, turning out about 200 lbs. of bird's-eye an hour. For *shag* the greater part of the midrib is removed, and is generally sent over in that state, thus saving the duty on the less valuable and heavier midribs. The tobacco, when cut, is then dried in troughs heated by gas, or sometimes first heated by steam while suspended in a cloth stretched across the bath, and afterwards dried. This process takes the cut out of it, and allows it to be more easily worked into shape for sale. It is constantly turned while drying, and is finished off by being placed on wooden trays exposed to the air for a few hours. The light-coloured tobaccos are all more or less doctored and flavoured, ess. of vanilla, oil of cassia, olive oil, glycerine, acetic

* For an article on the "Names of Tobacco" see THE CHEMIST AND DRUGGIST, 1878, p. 102.

acid, &c., being used to further these ends. *Cavendish* is prepared by the following process:—The darkest leaves are selected, moistened, and allowed to sweat, which renders them of a darker tint; they are then carefully smoothed out, and packed over one another in small bundles, and hydraulic pressure applied for a considerable time, varying from a fortnight to three weeks, which causes the juice of the leaf to exude to some extent, rendering the whole mass of a black colour. No other addition but water is allowed, but that of foreign manufacture is sweetened with molasses. Cut cavendish is darker than the cake, from its having gone through steaming process, which all cut tobaccos do.

Roll Tobacco.—This variety bears several names, according to the thickness and quality of the roll. It consists generally of an inferior leaf. The process is as follows:—The leaves, after being well damped, are cut in half, and the midrib removed. A leaf is then twisted round a spindle which is kept revolving. The workman, who has a small board strapped on his hand, applies leaf after leaf, pressing at the same time with the piece of board to render the twist regular in thickness. When finished it is coiled up in a stick, the end secured, and pressure applied, which reduces it considerably in bulk, and darkens the colour from a light brown to almost a black. They are sometimes dipped in a sauce composed of the expressed juice and molasses, to give a finishing coat.

Cigars are only the dried leaves deprived of their midribs and wound into a spindle form. They are made with the moist leaf, which in some cases is treated with various flavourings, and in cheap cigars the interior consists of inferior leaf-cuttings and scraps, which are finally enveloped in a selected leaf, which sometimes has a slight splash of tincture of iron applied to give it certain marks which connoisseurs consider a test for a good cigar. Many cigars purporting to be true Havannahs are composed mainly of German or other Continental tobacco, which is shipped to Havannah, and manufactured there into cigars, receiving as an external coat a true Havannah leaf. They are then imported into this country as above stated. Cigar-making gives employment to a very large number of hands in London, and it has been stated that the British cigar-maker can turn out cigars in no way inferior to foreign make. The process is one of great dexterity, and a good hand earns between 3*l.* and 4*l.* a week.

Snuff is tobacco finely ground, and is generally made from the refuse, or "smalts," and the midribs which are rejected in the manufacture of shag. Its manufacture is confined to a few large mills. The process consists of cutting the midribs into a kind of chaff, and heaping them together in a moist state; when sufficiently heated by the fermentation set up (which is known by the interior becoming almost black), it is then slightly dried and ground between stones, and from that passed through a tube or gutter, by means of an endless screw, to a series of large fluted iron mortars, whose jointed pestles are kept revolving by a shaft to which they are attached. This finishes the process of grinding. It is rather an interesting and novel sight to see the partially-ground snuff travelling along like a stream of water to its destination as above. The same method is made use of in large agricultural works, for conveying the crushed bones to their separate bins. In preparing some snuffs the fermenting process is not gone through, but they are either roasted in cylinders, or merely ground after drying. Snuff, whether moist or dried, should consist of nothing but the tobacco leaves, with or without the midribs; but oil, lime-water, &c., starches of the cereals, pea-meal, bran, sawdust, fustic, oxide of iron, and ground glass have at various times been used to adulterate snuff. A shoemaker's foreman was once heard to assert that by careful study and analysis he had at length discovered the principal ingredients of snuff. "Ay, mon, an' what's it made o'?" "Oh, just wi' coffeee an' grun glaiss; an' it's the glaiss ticklin' yer nizz that gars ye sneeze." I do not think adulteration is carried on quite to that extent, but a few years ago in Ireland the Valonia acorn-cups, imported for tanning purposes, were extensively used as an adulterant to high-dried snuff. On examining an adulterant sample with the microscope, it will be found to present a similar structure peculiar to our fruit stones, and, like them, contain an abundance of very thick-walled, porous cells, lying scattered or in masses amongst cellular tissue. No such cells as

these exist anywhere in the tobacco leaf or plant, and they are so characteristic as to proclaim at once their nature, if not their exact origin. The hairs of Valonia acorn-cup are simple hollow filaments, and are somewhat branched.

Tobacco-leaf Adulterations.—The temptation to adulterate tobacco in its various forms is very great, and will ever remain so while the tax on importation bears such an enormous ratio to the taxed material, as that of 3*s.* 6*d.* per lb. on leaves varying in price from 1*d.* to 3*s.* 6*d.* per lb. It might be safely said that not one person in a hundred has the slightest acquaintance with the general features and character of tobacco; and until the last few years it was found that leaves of wayside plants crept into the cigar and cut tobacco, but by comparing these leaves with those of tobacco under the microscope they will be found to possess certain unchangeable characters peculiar to each. I will cite a few examples. A section of the midrib of a tobacco leaf (as is seen in bird's-eye) presents a horseshoe form, in which the woody tissue lies as a central mass, surrounded by the cellular tissue. In all the leaves with which tobacco is, or is likely to be, adulterated the woody tissue of their midribs, or stalks, lies in separate detached bundles. By using a higher power with the microscope we shall find that the minute hairs with which each leaf is furnished have definite characters, and form invaluable evidence as to their source, and from their extreme delicacy of formation they elude the grinding action of the snuff-mill.

The tobacco leaf is furnished with two forms of hairs—long and short. The former consist of three or four elongated cells, joined end to end, and finally surmounted by a cluster of minute cells forming a gland, which contains a rich brown colouring matter. These are called glandular hairs, and they have two or more cells forming a compound base. The short hairs are unicellular with a cluster of cells at the apex, also containing colouring matter; their bases are simple.

The leaves of the *Dock* are furnished with peculiar club-shaped unicellular hairs free from colouring matter, but the surface is striated, formed by a wrinkling, as it were, of the cell walls. An equally marked character is the presence of numerous glands containing raphides of oxalate of calcium; these are found on the thin portion of the leaf-blade, the hairs being principally on the veins and midribs.

Leaves of the *Burdock*. These are covered on their lower surface with a dense greenish-white woolly substance, which consists of a number of hairs, each composed of a number of cubical cells joined together like a string of beads. These gradually diminish in size, and finally end in a slender transparent filament of great length. The bases of these hairs are compound.

Leaves of the *Chicory*. These have a special call for our attention. A few years ago some tons of these leaves steeped in tar oil were seized in Ireland by the revenue officers on the premises of a cigar manufacturer, by whom they had been freely used as "fillers" for "pure Havannahs," and so good was the sophistication that many practical men were actually deceived by them. When the leaves were unrolled, their margins at once told a tale, and when examined under a high-power lens, abundant minute hairs were discovered, as unlike those on the tobacco leaf as could well be imagined. For above a third of its length each hair is composed of a number of oblong cells laid side by side, and end to end; these gradually lessen in number, until they form a row of single cells joined together. A cluster of cells form a compound base to each hair.

The leaf of the *Comfrey*. This leaf is furnished with two forms of hairs, both of them very singular in appearance. They are both unicellular, the smaller one being formed like a fish-hook; the other very sharp pointed with a compound base, and the whole surface coarsely striated.

The leaf of the *Jerusalem Artichoke* furnishes beautiful examples of compound hairs with recurved points and compound bases, their surfaces being covered with minute warts.

There are several other leaves which have at times been used, but it would occupy too much time to mention more. The margins of the leaves are no sure test, as they are in most cases trimmed off before making up into cigars.

Its Application in Medicine.—Tobacco has been recommended in the form of an ointment in croup, as a cataplasm

for articular rheumatism, as well as for injection in obstinate vermiform affections. As a narcotic it is employed chiefly to produce relaxation in spasmodic affections. For this purpose the infusion, or the leaf in substance, in the shape of a suppository, is introduced into the rectum in cases of strangulated hernia and obstinate constipation from spasm of the bowel. Snuff drawn up the nose is said to be an effectual remedy for maggots in the nose (*Medical Times and Gazette*, February, 1875). The internal use of tobacco is seldom resorted to, from the distressing nausea it is apt to occasion.

Chemical Composition.—Tobacco contains an extremely poisonous substance, called nicotine, to the extent sometimes of 6 per cent., but the proportion is liable to great variation. It can be extracted from a watery or alcoholic extract of the leaves as a malate, from which the alkaloid may be obtained by mixing with solution of potash, which sets free the nicotine; this is again taken up on agitating with ether, which is then drawn off; a little slaked lime is then added, and distilled in a current of hydrogen, the temperature being gradually raised by means of an oil bath to 356° Fahr., at which the nicotine is volatile. It is a colourless, oily liquid, sp. gr. 1.027, with a strong alkaline reaction. It is very soluble in water, spirit, ether, turpentine, and the fatty oils; it boils and undergoes decomposition at 482° Fahr. It is a very active poison, resembling hydrocyanic acid in its action, and was employed by Count Bocarmé for the murder of his brother-in-law some years ago. The only other substance of any importance in tobacco is "tricotianin," or "tobacco camphor," which is obtained by distilling the leaves with water. It is a concrete volatile oil, and is only present in small quantities, about 2 grains in each pound. It is not poisonous. Both the above substances are said to be present in the impure oil resulting from the combustion of tobacco. This empyreumatic oil is said to have been used by the Hottentots to kill snakes, which is done by placing the pipe stem on the reptile's tongue, producing sudden death as by an electric shock. This oil is official in the United States Pharmacopœia, and is obtained by destructive distillation. It is a thickish black liquid of a strong characteristic odour, identical with that of old tobacco pipes; it is a powerful poison, and is used in the form of an ointment—20 drops to the ounce—as an application to indolent ulcers, but it requires great caution when the skin is abraded. The composition of tobacco smoke has not been thoroughly settled, but recent researches have rendered it at least very probable that it owes very little of its potency to nicotine, and very much to the combustion products, of which pyridin seems to be the most powerful. These products seem to differ from nicotine in their action only by being milder and less toxic in their operation.

The tobacco leaf is among the leaves which are richest in mineral matter, yielding 19 to 28 per cent. It is this which forms the ashes to our pipes and the nozzets of our burning cigars. This fact alone shows to what an extent the plant draws upon the soil.

Its Use and Abuse.—From the earliest ages narcotics have been used in various forms by the human race, and to this practice amongst the heathen, Isaiah probably alludes when he upbraids the Jews for "remaining in the groves and lodging in the monuments"; for at that time it is well known that men went into the heathen temples to place themselves under the influence of some narcotic, presumably opium; and so with other races. In the South of Asia the betel leaf, with areca nut and a little "chunnum" (lime produced from burning shells), is said to act on the nervous system by soothing, and at the same time promoting digestion; the latter action is open to doubt. The coca leaf has likewise been much vaunted, but in this country has not proved so valuable as it is said to be in Peru, where the miners use it regularly, chewing it with lime. Tobacco is one, and one of the least harmful, of those agents by which soldiers and others who are compelled to undergo strenuous exertions at times, with a sadly insufficient supply of food, are enabled to hold out and do their work effectively. What opium is to the Tartar courier, or coca leaf to the Peruvian miner, tobacco is to the British soldier and sailor, in supporting him under severe and continuous efforts, when rest and sufficient food are alike beyond his

reach. But the pernicious habit of smoking at any and at every time, as is practised in the present day by persons in full health, is a useless, dirty, and an expensive one, and is too often injurious, in an indirect manner, by its acting as an inducement to drink. It is true that the more the wants of man are multiplied, the more industrious he becomes; but the use of tobacco is at once a dirty and an offensive luxury, and, with the exception of ardent spirits, there is hardly any article in which the money of the poor would not be better expended. There can, I think, be no doubt that the habit of smoking is spread more from the force of example than from any beneficial results produced by it. As regards the physiological action of tobacco upon the bulk of mankind, and apart from its moral influences, it may be received as characteristics of this substance amongst narcotics,

1st. That its greater and first effects are to assuage, and allay, and soothe the system in general with a temporary annihilation of thought.

2nd. That its lesser and second or after effects are to excite and invigorate, and at the same time to give steadiness and fixity to the powers of thought.

The most familiar of the physiological effects of tobacco are those experienced by young smokers, who rarely fail to poison themselves to a greater or less extent, nausea, giddiness, cold sweating, and vomiting being the symptoms in their first trials. According to a celebrated writer, speaking on the effects of smoking, he states that he has repeatedly asked the Turks what they had been thinking about whilst smoking? The answer was—"Of nothing." Not a single idea could be recalled to their minds. This may be a peculiarity of the Turkish or Moslem character, but I have heard fellow-students remark that they could do no real study while smoking. However, it is a known fact that some German writers invariably smoke while writing. If it so conducive to thought, why should it be so exclusively enjoyed by the male sex?

I will conclude with an extract from the "Counter-blast to Tobacco":—"Have you not reason, then, to be ashamed and to forbear this filthy novelty, so basely grounded, so foolishly received, and so grossly mistaken in the right use thereof? A custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in black stinking fume thereof nearest resembling the horrible Stygian smoke of the pit which it bottomless."

DIARRHOEA.

AT this season of the year diarrhœa is very prevalent, and forms a not inconsiderable item in the mortality returns, especially among children. It exhibits all shades of severity, from a mere temporary attack, which is all over in an hour or two, up to fatal attacks of cholera. It becomes epidemic during the autumn months. Unripe or over-ripe fruit has a great deal to do with such outbursts, more particularly in children. The poor often buy fruit from costermongers which is "going off," and being cheap, a large amount is eaten, often followed by a severe attack of pain, sickness, and copious evacuations, which may readily yield to treatment, or may pass into the more serious and fatal forms, death resulting in a few hours.

In order to fully understand the subject it may be well briefly to state the chief anatomical and physiological characteristics of the alimentary canal. Commencing at the lips, we have the cavity of the mouth, in which the food is received whilst it is subjected to the grinding and cutting of the teeth, thoroughly mixed with the saliva, to render the bolus moist and capable of being swallowed, at the same time that this secretion acts upon all starchy matter, converting it into grape-sugar; when the mass is sufficiently masticated it is carried on, by the action of the tongue, to the back of the throat (the cheeks being closely applied to the teeth prevent any escape outside these), and then passes down the œsophagus, or gullet, to the stomach. In the early part of this process two dangers have to be avoided: one is that the food may escape through the nostrils, which open into the upper part of the throat; this is prevented by the soft palate, which, together

with the muscles 'passing' on either side from the palate to the tongue and pharynx, completely shut off this cavity from the mouth during the process of deglutition, and form an inclined plane to direct the morsel downwards. The other, and far more serious, danger is to prevent any food passing into the windpipe. The mechanism for this purpose is very perfect. At the base of the tongue is placed a somewhat triangular-shaped piece of cartilage, the apex being attached, the other and larger part free. Just as the bolus is entering the throat certain muscles pull up the pharynx to receive it, and at the same time also raise the windpipe, so that its upper opening is covered by the piece of cartilage before mentioned (called the epiglottis), like a lid covering a box. Syphilis often destroys this epiglottis or renders it imperfect, when all the phenomena of suffocation may arise from portions of food blocking the air-tube.

Arrived in the stomach the process of digestion proceeds more slowly—the food is subjected to the action of the gastric juice, an acid fluid containing pepsin. Each aperture of the stomach is guarded by a valve; the one where the gullet ends is called the cardiac valve; the other, where the stomach opens into the small intestine, is called the pylorus. During digestion each of these valves is closed, only opening to admit fresh portions or to allow digested material to pass. This action resolves the swallowed material into a "characteristic thick, pulsatious, grumous consistence, with the undigested portions of the food mixed in a more fluid substance, and a strong, disagreeable acid odour and taste," and this goes by the name of "chyme." As successive portions of the food are reduced into this state the pylorus opens and allows its passage into the commencement of the small intestines. During the time of digestion the stomach is in a state of constant motion, so as thoroughly to mix the food with the gastric juice and to expose every part fully to its action. Albuminoids, which, in their natural state, are non-diffusible, and therefore could not be absorbed by the blood-vessels, undergo a change which renders them capable of absorption, and these are called peptones.* A certain amount of absorption of all soluble substances goes on during the time the swallowed materials remain in the stomach, and a certain amount of starch is converted into sugar by the saliva which is swallowed, but not to any great extent, for the acid gastric juice interferes with this; the juice itself has no action on starchy matters whatever. Fats are reduced into minute particles and mixed with the chyme.

The food has now arrived in the intestines, a long muscular tube measuring 24 feet to 26 feet, and divided into two portions, the small and large, the point of division being marked by a special valve, called the ileo-cæcal valve, which allows a free passage from the small into the large bowel, but effectually prevents any regurgitation of the contents of the latter into the former. The small intestine is about 20 feet long. This long tube occupies the greater part of the abdomen, and is arranged in coils. It is supplied with two layers of muscular fibres—one a longitudinal, which draws up or shortens any given part, and a circular, which, gradually contracting downwards, forces on its contents. This combination of movements is called peristaltic or vermicular, and passes downwards in the form of a wave, and may be well seen by opening the abdomen of a recently-killed animal, when on the entrance of the air these peculiar movements are excited. In health these movements are not perceived, but under certain circumstances give rise to much gripping pain. At the lower part of the large intestine, called the rectum, these circular fibres form a thick band, called the internal sphincter, and a little lower down is another band, called the external sphincter, and it is by the constant contraction of these that we are enabled to confine the contents of the bowel until such time as it is convenient to discharge them. All these actions are under the control of the nervous system, and can be increased, lessened, or suspended by it; and this readily explains the curious result of mental states over this part of the body.

Just after leaving the stomach the chyme comes into contact with the bile and pancreatic fluids, and the whole

length of the intestinal canal pours out a juice called the *succus entericus*. All of these are more or less alkaline, and acting upon the acid contents of the stomach as they are discharged, soon render them alkaline also. In the small intestine the digestion of fat chiefly goes on—the fatty matters become emulsified by admixture with bile and pancreatic juice, and are then absorbed by the "villi," little processes in the mucous membrane of the small intestine, containing a minute vessel called a lacteal, into which the fat passes. After being emulsified the mass is called "chyle." The pancreatic fluid also converts starch into sugar. Liquids and all soluble matters are readily absorbed as the mass goes down the small bowel and passes the ileo-cæcal valve as a thin pulsatious mass, of a light yellow colour and a distinctly faecal odour. In the large intestine a vigorous absorption of fluid goes on, but probably no further digestion of fat, as there are no villi. At last nothing remains but the undigested or chemically modified residue of the food and certain matters derived from intestinal secretion, and this is discharged from the rectum as the feces, the average quantity evacuated in 24 hours by an adult being 6 to 8 oz. Looking to the large quantity taken in by the mouth during that time, the very large quantity of the different secretions, and the small quantity discharged, we shall be able to realise how perfect and well-adjusted is the balance between secretion and absorption. To appreciate the large circulation of fluid from the various organs into the intestines to aid in digestion, and then back into the vessels by absorption, it is only necessary to mention the average daily secretion of the various digestive juices:—

"The quantity of saliva secreted in 24 hours varies, but its average amount is probably from 1 to 2 lbs." (Harley).

"The quantity of gastric juice secreted daily has been variously estimated, but the average for a healthy adult may be assumed to range from 10 to 20 pints in the 24 hours" (Brinton).

"It has been estimated that 12 to 16 oz. of pancreatic fluid are secreted daily in the human subject."

"Various estimates have been made of the quantity of bile discharged into the intestines in 24 hours, the quantity doubtless varying, like that of the gastric fluid, in proportion to the amount of food taken. A fair average of several computations would give 30 to 40 oz. as the quantity daily secreted by man."

The quantity of *succus entericus* is difficult to determine. The above extracts are taken from Kirke's "Physiology."

We are now in a position to discuss the causes of diarrhoea. It may result from increased peristaltic action, so that the contents of the intestines are hurried on too rapidly for the proper digestive action to have its due effect, and a large quantity of fluid is thus lost, as well as nourishment, and the balance between secretion and absorption is at once lost, the blood is deprived of a large amount of fluid, and hence the pain, exhaustion, and thirst which are prominent features. A second cause is excessive secretion, giving rise to irritation. Both of these causes may be more or less blended.

Diarrhoea may be either symptomatic or irritative. When symptomatic it is only one, perhaps the most prominent, of the signs of a much more serious condition, and to the treatment of which it belongs; thus it comes under this head when occurring in typhoid fever, cholera, enteritis, dysentery, pyæmia, various fevers, Bright's disease. In such cases it is only part of the general condition, and does not come under our present category. Irritative diarrhoea is that depending on the introduction of some irritant from without, as in the case of the irritant poisons, improper articles of diet, &c., or it may arise through the action of the nervous system—some people being so constituted that the slightest mental emotion is accompanied by diarrhoea.

All bad hygienic conditions predispose to this state, such as overcrowding, impure water and air, uncleanness, excessive fatigue, and especially emanations from decomposing animal matter. Improper diet is a very constant factor, imperfectly-cooked food, meat somewhat tainted, unripe or over-ripe fruit. Certain articles of diet will also give rise to this condition in certain individuals, this being a special idiosyncrasy.

Its symptoms are sufficiently obvious—the individual is suddenly seized with twisting pains about the navel, which may extend all over the stomach, but more frequently are limited as above stated; there is also generally more or less

* Peptones differ from albuminoids in being diffusible, not being precipitated by heat, nitric acid, acetic acid, or ferro-cyanide of potassium—they are thrown down by tannic acid and perchloride of mercury.

severe sickness, and a constant desire to go to stool, with the discharge of more or less copious fluid, which give rise to much irritation and soreness about the anus. The pain is sometimes very severe, and there may be blood in the stools. The patient soon becomes weak, thirsty, tongue furred, pale, with tendency to faintness. After a time all may pass off; or cramps occur about the limbs, face becomes pinched, of a bluish tinge; there is more or less constant discharge of a watery fluid, and death soon closes the scene. It is always important carefully to examine the stools, to see whether there is any blood, and to obtain an accurate idea as to the nature of the discharge. It is most important to bear in mind that these are the very symptoms that may arise in cases of poisoning by arsenic, antimony, &c., and to be on one's guard. "Symptoms of irritant poisoning, as a class, are burning pain and constriction in throat and gullet, sharp pain, increased by pressure at pit of stomach, intense thirst, nausea and vomiting, followed by pain, tension, and tenderness of entire abdomen, and purging, attended with tenesmus, and frequently with dysuria." (Guy's "Forensic Medicine.")

Drinking of cold water in large quantities, especially when the body is heated, may give rise to vomiting and diarrhoea.

The treatment will be limited to those cases which are examples of ordinary summer or autumnal diarrhoea. Where there is clear evidence of any irritant matter having been taken it is the proper course to get rid of it by a dose of castor-oil, with a drop or two of laudanum, to prevent any griping, and, after this has operated to commence the ordinary astringent treatment. Generally, however, patients have been purged for hours before they seek advice, and hence all irritating matters have been discharged, and it is well at once to endeavour to check it.

Diet is a most important element; the tongue is usually furred, the digestion seriously impaired, so that it is important to give very bland and easily-absorbed food. Milk is most useful, and if there is much vomiting it may be given with lime-water or soda-water—the latter making a most refreshing and agreeable beverage when thirst is greatly complained of. Starchy foods are of great value, as they tend to constipate, and so serve the double purpose of food and astringent. Rice, sago, arrowroot, corn-flour, are all most useful. Starch itself, made rather thick and eaten, will sometimes prove of the greatest service. All solid food must at once be stopped. Ice will be found most useful. As to stimulants, in the majority of cases they are not needed; they give temporary relief at the cost of increasing thirst and producing a feverish reaction; they should only be used in cases of urgent danger and as substitutes until something better can be obtained. Hot dry flannels to the stomach may relieve the pain, especially if sprinkled with a little turpentine. If the feet are cold hot water bottles should be applied; and if there are cramps in the limbs mustard plasters should be at once applied, as also over the heart, should there be any sign of its flagging. As to medicines, opium comes first of all—it may be given either in the solid form as a pill or combined with sulphuric acid in the form of laudanum. A most useful mixture, and one that rarely fails, is acid. sulph. dil. ʒiiss, tinct. opii ʒiiss, aq. ʒviii.— $\frac{1}{2}$ part four hours. The old chalk mixture, with opium, is useful, but is more suited to the case of children, with a little aromatic confection. If medicines do not seem to have much influence, use a small injection of starch and opium—about ʒij. of starch to 20 or 30 minims of laudanum; this, again, is most useful with children. For more obstinate cases logwood, krameria, nitrate of silver, acetate of lead, sulphate of copper, the latter three used in the form of pills. It is well, for some days after the attack is over, to carefully regulate the diet, so as to prevent a return. Tonics will be needed to complete the cure when there has been much depression.

M.R.C.S.

COCKROACH POISON.—Equal parts of powdered borax, Persian insect powder, and powdered colocynth, well mixed together, and thrown about such spots as are infested with these troublesome insects, will prove an effectual means of getting rid of the scourge. This powder, in all cases where its use has been persistent, has by long experience been found an infallible remedy.

THE INCREASED CULTIVATION OF OPIUM IN CHINA.

By THOMAS H. BATEMAN, Ph.C.

IN obedience to an Imperial decree, lately issued, to put a stop to the cultivation of the poppy in the Kansuh province, the following report has been sent in by T'so Tsung-tang:—

"The poppy will only grow luxuriantly on rich and fertile land, and the result is that ignorant people, hankering after the large profits yielded by a poppy crop, plant it on the rich land that ought to be devoted to cereals, discarding the good and beneficial crop for a baneful and noxious herb. Thus, not only is there no limit to the dissemination of the poison, but to this must be added a falling-off of agricultural operations since the late troubles, affording serious reason to apprehend a failure in the supply of food for the people, and maintenance for the soldiery. The question caused the memorialist, T'so Tsung-tang, much anxious thought when he witnessed the condition of the country as he passed through the Great Wall on his return to Kansuh, and he repeatedly prohibited cultivation of the poppy by proclamation, issuing at the same time four-character rhyming admonitions, which he caused to be printed and widely distributed. These exhortations and prohibitions have not been entirely without effect during the last few years. Nevertheless there still exists a large amount of quiet and stealthy cultivation in the outlying districts and hamlets, while it is not an uncommon practice to mingle the crop with beans and wheat to avoid detection, and the uprooting that would follow. Two years ago a list of penalties, to be inflicted in case of negligence in the matter of supervision, was forwarded by the Board of Civil Office, when renewed efforts were made by the memorialists to suppress the evil. Fresh instructions were issued to local authorities, the military were called in to aid in the work of inspection, and special officers were deputed to assist the local authorities in making a thorough search throughout their respective jurisdictions, while intendants of circuit and prefects were directed to visit villages on horseback from time to time, accompanied by a numerous following. These visits were made several times a month, and whenever the poppy was found to be mingled with the bean or corn crop it was hoed up and rooted out, until the land was everywhere ploughed up and irrigated, preparatory to receiving an orthodox crop, and not a flower or a plant of the poppy was to be seen, the land hitherto devoted to its growth being once more put to its proper use. Satisfactory reports were received from 14 prefectures, departments, and districts; but in the Ning-hin prefecture the occupiers of fertile land obstinately adhered to their evil practices, and cultivated the poppy on an extensive scale, regarding it as a fruitful source of gain, and everywhere declaring their inability to pay taxes on their land, when the authorities attempted to enforce the prohibition, while their iniquity reached its climax when they devoted fruitful land, that should have been occupied by cereals, to the growth of this noxious herb. As compared with the growth antecedent to the capture of Kin-ki-pao, the cultivation of the poppy has considerably increased, and the reason for this is explained by the fact that Mahomedans are restricted by their laws and customs from the use of opium, and the people standing in awe of them, while they were in revolt, were indisposed to engage largely in its collection.* After the recapture of Ning-hin and Ling-chow, and the expulsion of the rebels, followed by the encouragement of agricultural immigrants, a gradual increase in the cultivation of the poppy ensued, until it became several fold more extensive than in former years. On the occasion of the famine in Shensi, the year before last, the memorialists directed the prefect of Ning-hin to obtain supplies of grain from the people, for sale to the sufferers at reduced rates, and their demand was met with the reply that there was scarcely any to be bought, the reason clearly being that at least half the fertile land was under cultivation with the poppy. In addition to exhortations, proclamations, inspections, and the restraints that heads of families and communities are able to employ, attention being particularly directed to the six districts of the Ning-

* No one familiar with accounts of the habits of Moslems will be inclined to accept this explanation.—ED. C. & D.

hin prefecture, the memorialists have endeavoured to overcome the practice by arguing the question on utilitarian grounds, and pointing out to the people how they could reap almost equal profits by the cultivation of cotton or grain, which would realise high prices in years of dearth and scarcity; crops, moreover, that have this advantage over the poppy, that they are sanctioned by law, and are not liable to be rooted up and destroyed."

Now, this memorial of T'so Tsung-tang's, on the growth of the poppy, is a document of some importance in the literature of the opium traffic in China. T'so has been trying an experiment, and has to acknowledge his want of success. T'so is no ordinary official. He is the conqueror who restored the forces of the North-West to discipline, and led them some 900 miles to the capture of Kashgar. If any man, therefore, were competent to prevent the increase of the growth of opium, T'so would naturally be he; and if anywhere circumstances are favourable for the attempt, those conditions are to be found in the recently settled provinces of Shensi and Kansuh, where the military discipline introduced by the Commander-in-Chief has not yet lost its vigour. T'so is, moreover, in this matter of opium, an enthusiast; he looks upon it as the source whence a large part of the evils under which China labours have arisen, and, thinking so, he has tried his utmost to prevent the growth of the drug in his jurisdiction. In this matter he finds that circumstances are working against him, and most of all that he has interfered with the ordinary lines of supply and demand, and with, I may add, the results usual in such cases.

The people of China, in a few words, will have opium to smoke. Shensi is far from the sea, and the foreign drug cannot make its way thither. Exactly in proportion to the stringency of T'so's action the temptation to grow opium increases, as the crop becomes the more valuable, the more difficult it is to procure the drug. So T'so finds that in those districts which are the most settled there is the greatest difficulty in repressing the growth, because, firstly, the people are numerous enough to screen one another, and, secondly, there are more smokers desirous of obtaining the solace of the pipe. Under these circumstances the Viceroy makes an appeal to the love of gain of the people, but it must be evident at a glance that T'so's economy is sadly at fault. Why, he says, grow a noxious weed when you have fertile lands which will grow human food?

In the answer to this lies the whole secret of the leaning of the Chinese towards the cultivation of opium. The people grow opium because, however great is the produce, they always find a market for it, and so enrich themselves and the country; while they do not care to grow more corn than they absolutely require, because, from a course of misgovernment, lasting for many years, their surplus is absolutely unsaleable. Opium is portable, and a man can carry many taels' worth of so valuable an article. Corn, on the other hand, is heavy: there are no roads in the country and no free circulation of commodities, so it is not worth a man's while to grow corn merely for the pleasure of reaping and storing it. True, if the people had, the year before last, grown more corn, the Government would have given them something for it; but famines, such as that of 1877 in Shansi, are fortunately not of frequent occurrence in China, and for the most part the corn grown would be left in the field to rot. So people without hope of reward become listless; and listless people hail the pipe which, for the moment, takes them from themselves. Herein lies the cause of Chinese opium-smoking, and to eradicate the habit we must destroy its causes. Till some attempt is made to do so the fitful efforts of enthusiasts like T'so will have a tendency to do harm instead of good. T'so's woollen mills, should they prove a success, by introducing a new industry and giving the people a hope of reward for their labour, will do more to counteract the spread of opium cultivation than the most powerful means of repression.

In conclusion, I would call attention to the unchristian behaviour of the Protestant missionaries in China, who have so systematically prejudiced the public mind in England that they have got statesmen and the public to look upon foreign merchants in China as villains of the deepest dye, who are trying to demoralise the Chinese by selling and smuggling opium into their country. It has recently been proved, by an official of the Foreign Customs,

that the documents all exist which conclusively establish the fact that, before a pound of opium was brought to China by foreigners, the cultivation of the poppy and production of opium was carried on to a very considerable extent in the provinces of Szechuen and Shensi, which was discouraged by the mandarins as soon as they found that they could get more revenue from the foreign drug.

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[We are not disposed to agree with this attack on the Protestant missionaries. It is quite certain that the English nation committed an unparalleled oppression (*i.e.*, crime) when, by the Opium war, we forced the Chinese to admit into their country an article of commerce they desired to exclude. Even if the article had been sugar or cotton nothing can be urged to justify our action, and had France or Russia been the offender it would have been gibbeted by the English press from that day to this. We go to city missionaries, district visitors, and the police, and not to the American consuls in England, when we wish to learn the effects of drink on the lower classes, and in the same way we must go to the missionaries rather than to the European officials and residents in China to learn the evil effects of opium on the masses. Europeans, moreover, are biassed by their interest in the existing state of things. The former or present cultivation of opium, however great its extent, cannot justify the maintenance of an oppressive treaty.—Ed. C. & D.]

ERYTHROXYLON COCA.

THE following particulars respecting this plant are taken from a long paper read before the American Pharmaceutical Association by Mr. J. G. Steele, of San Francisco:—

The *Erythroxylon coca* is a bush which attains a height of six or eight feet, and resembles in its small white flowers and bright green leaves the English "thorn." It is of the family of the Erythroxylaceæ (from the Greek, erythroxylon, being composed of the root-words, erythros, red, and xylon, wood). This family is an order of plants allied to the *Supinales*, Diaz. Complete, partially symmetrical flowers, an imbricated calyx, petals white, with an appendage, sessile pendulous ovules, capitate stigmas, and a straight embryo. They are shrubs or trees. The order contains but one genus, *Erythroxylon*, which includes 75 species, natives of the warmer regions of the globe, and especially abundant in Brazil, closely allied to the order *Malpighiaceæ*. Some plants are tonic, others purgative, and others stimulant and sedative.

The most important species is the *Erythroxylon coca*, the leaves of which have been used for an indefinite period by the Peruvians and other people of South America (who style it "el santo remedio—la folio de coca," the blessed remedy—the coca leaf) to form a masticatory in a manner to be described further on. Among the authors who have written about the coca, may be mentioned the Jesuit Father Julian, Garcilasso de la Vega, the famous historian of the reign of the Incas; Von Tschudi, author of a work entitled "Travels in Peru, from 1838 to 1842;" Dr. Weddell, Clusius, Prescott, in his memorable history of "The Conquest;" Dr. M. A. Fuentes, and Dr. J. H. Scrivener, both residents of Lima, and the English writer Johnston.

The coca-plant is a native of the tropical valleys occurring in the eastern slope of the Andes, in Bolivia and Peru, and it still grows wild in many parts of these countries. That which is used by the people, however, is chiefly the product of cultivation.

In the inhabited parts of the above valleys it forms an important agricultural crop. It is raised in seed-beds, from which it is planted out into regularly arranged coca plantations. The steep sides of the valleys, as high up as 8,000 feet above the level of the sea, where the mean temperature is from 64° to 68° Fahr., are often covered with these coca plantations.

In the cultivation of the coca, the soil is well prepared previous to the sowing of the seed, and then divided into different compartments. After the sprout has come up, which takes place in a few weeks, and when they have grown

to two or three feet in height, they are transplanted within two or three feet of each other to other grounds, which are called "cocaes."

These plantations are formed in the most shady places, for the purpose of protecting them from the heat of the sun, which is very powerful in the deep valleys of these regions. Indian corn is also sown between the rows, the broad shady leaf of which serves as an additional protection. During the growth of the plant irrigation is freely employed.

The coca grows luxuriantly in all the valleys, and arrives at perfection in about three years, which time is known by the height of its branches and the brittleness of its leaves, which break or fall on being carelessly handled.

The leaves, which are the valuable part of the plant, resemble in shape and size those of tea, being oval-oblong, pointed, two inches or more in length by about an inch in breadth, and furnished with short, delicate footstalks. They are not, however, like the tea-leaves, dentate, and are distinguished by having a slightly curved broad line on each side of the midrib, running from the base to the apex. The flowers are white, and produce a red berry. When well dried and carefully preserved, they have an agreeable odour, strongly resembling that of tea, and a peculiar characteristic taste, which in decoction becomes bitter and astringent.

When the leaves have attained their full development, they have acquired a certain degree of consistency and show a brilliant deep-green colour, resembling the emerald, on the upper surface, and a clear pale yellow on the under side of the leaf.

During the gathering great care must be taken not to injure the young leaf-buds, or they will dry up, and the second crop of leaves be diminished. They should be gathered leaf by leaf, holding the bough with the fingers of the left hand, and collecting with those of the right. The leaves, as soon as taken from the trees, are spread out upon paved surfaces to dry slowly, and then stored in barns or huts. Care has to be exercised in drying, so that they are not stored away too soon, otherwise the leaves would lose their colour and develop an unpleasant smell and taste. The process of drying gradually converts the colour from the brilliant emerald-green before noted, to a considerably darker hue. The average produce is 800 lbs. of the leaves to the acre. The leaves, when fully dried, are wrapped up in palm leaves and covered with flannel. Packages are made of them of 50 lbs. each, which are called *cestos*, others of 100 lbs. are called *tombas*. They are then conveyed on the backs of llamas to the custom-house in La Paz, and sold to the miners for the Indians of their establishments.

The duties on the coca form an important revenue to the nation, amounting to about \$400,000 a year. It is not known when the coca was first discovered, but it must have been at an early period, probably under the Incas. Its production was very great during the Spanish sway, for it then became an article of importance to the Indians. Previous to that period, according to Prescott, it was reserved for the Lucas and nobles of the country. In the splendid and sumptuous city of Cuzco, the capital of the Incas, the coca leaf was used as an article of luxury. "The Incas and nobles masticated it in their palaces and temples, which were richly adorned with gold and silver."

The Indians of Peru refer to mystic traditions for the origin of this plant. They hold that Manco Capac, the divine, descended in the primitive epoch from the rocks of Lake Titicaca and bestowed the light of the sun (his father) upon the poor inhabitants of the country; that he gave them a knowledge of the Gods, brought them the useful arts and agriculture, and presented them with the coca, "that divine plant, which satisfies the hungry, gives strength to the weak, and makes them forget their misfortunes."

The Indians of the Peruvian Andes are subject to fits of melancholy or are generally of a gloomy temperament. Dr. Weddell, who travelled extensively in South America, and published in Paris, in the year 1853, a work entitled "Travels in the Northern Parts of Bolivia," says, "It is difficult to have lived for any length of time among them without being struck by the expression of concentrated melancholy which can be read upon their features, and which seems to speak of an undefined but constant suffering."

One would have supposed that when the free republics of South America were established the trials of the long-oppressed aborigines would have been at an end, and some-

thing like political equality would have prevailed among the different races. But such is not the case. In Bolivia every Indian from 18 to 50 years of age is subject to a poll-tax of \$5, if he is a labourer, and from \$6 to \$10 if he is a proprietor, and this tax is collected half-yearly. No equivalent tax is imposed upon the whites, and from this source alone \$4,500,000 are derived, the total yearly revenue of the Republic being but \$10,500,000. The unhappy race, therefore, is still ground down by the dominant blood, and the melancholy feeling of inferiority is still perpetuated.

It does not appear, however, that the coca adds to the gloom of the unhappy Indian. On the contrary, he takes it to relieve himself, for the time, from the peculiarities of his temperament and situation. It has come down to him as a relic of the ancient enjoyments of his people, and during the fantasy it produces he participates in scenes and pleasures from which in common life he is altogether excluded. As a relic of the past, he attaches superstitious ideas to the coca, which must triple in his imagination the benefits he receives from it, and its value to him is further enhanced by its being the sole and only distraction which breaks the incomparable monotony of his existence.

There can be no doubt, from the abundant testimony of eye-witnesses and a multitude of writers, that the coca is both salutary and nutritious; in fact, the best gift that the Creator could have bestowed upon the unfortunate Indians. It is of inestimable value to them, for without it they would do nothing with spirit or good-will.

They always carry a bag of the leaves hanging from their neck, and a small flask by their side, filled with lime or wood-ashes, formed of the burnt stems of the *Chenopodium quinoa*. The manner of employing them is singular, and is as follows:—The Indian takes a handful of coca leaves out of the bag and withdraws the filaments from them. He then puts them into his mouth and chews them into the form of a ball. He next wets a piece of thin stick, which he introduces into the flask, and on withdrawing it it is covered with the lime or ashes. He then, withdrawing the ball from his mouth, pierces it with a stick in various places, and upon again taking it in the mouth it has acquired a strong and pungent taste. This is followed by a copious salivation, part of which is ejected from the mouth and part swallowed. The ball is retained in the mouth for about an hour, and is then sometimes renewed with another handful of leaves.

They generally take coca three times during the day. The first time, before commencing their work; the second, about the middle of their task; and the third, some time after the completion of their labours.

For a long time the reputed virtues of the coca leaf were scouted as fabulous by most Europeans; but later, the results of experience, the impartiality of the celebrated historians, and the authority of a great number of scientific men, corroborated the facts set forth as to the benefits of this custom among the Indians.

The proprietors of the mining establishments in Potosi and other districts are abundantly supplied with coca, which they distribute to the Indian workmen. The quantity which they give to each Indian is an ounce and a half, with the exception of "holy days," when it is increased to three ounces.

Groups of Indians may be seen on those days, during the hours of rest from their labours in the mines, chewing the coca with as much pleasure and delight as a connoisseur in tobacco smokes a fragrant "Havana." The effects of the coca on the Indian are very remarkable. They are strongly marked in his countenance by a greater brilliancy to his eye and a more animated expression to his features, while he shows more agility in his step and the other movements of his body, and his whole appearance is one of animation and content, as if he had just partaken of a rich repast.

The properties of the coca are variable according to the quantity and mode of administration. It is a stimulant, a tonic, slightly narcotic, and very nourishing. It produces a general excitation of the circulatory and nervous systems, imparting increased vigour to the muscles as well as to the intellect, with an indescribable feeling of satisfaction, without being followed, as in the case of other stimulants, by any feeling of languor or depression! It possesses an agreeable aroma and a flavour similar to that of tea, and like that plant, is frequently employed in the form of an infusion in slight disorders of the stomach. When infused

and drunk like tea, it produces a gentle excitement, followed by wakefulness, and if taken strong, retards the approach of hunger, prevents the usual breathlessness in climbing hills, and in large doses, dilates the pupils and renders the eye intolerant of light. It is seldom used in this way, however, but is usually chewed in the form of a ball or quid (as before mentioned), which is turned over and over in the mouth as is done with tobacco. In this way its action is more gradual and prolonged than when the infusion only is taken. It is also very different in its character, because the constant chewing, the continual action of the saliva, and the influence of the lime or ashes chewed along with it, extract from the leaf certain other active ingredients, which water alone does not appear to dissolve when infused after the manner of tea.

Those addicted to the habitual use of coca claim, and not without abundant proof, that the moderate use of the leaf strengthens the gums and preserves the teeth. Taken in the form of an infusion it excites perspiration and soothes those who suffer from asthma. Taken either in infusion or chewed, it assists the functions of the stomach, and cures gripes or colic. Applied externally in frictions or plasters, it allays rheumatic pain. Various authors assert that it cures intermittent fevers, and is a protection against syphilis, which last statement is exemplified by the fact that those addicted to the use of coca are exempt from all traces of this widespread disease!

Sir Robert Christison, of England, has, during the past year, made a number of experiments with the coca leaf, and offers the following conclusions:—

First. That taken in quantities of 2 drachms by healthy persons it has no injurious, unpleasant, or suspicious effect whatever;

Second. That fatigue is removed and prevented from returning;

Third. Its restorative and preventive powers render protracted exercise easy, without any subsequent harm, and

Fourth. It does not impair the appetite or digestion, although hunger, even after long fasting, is taken away for an hour or two.

The Jesuit Father, D. Antonio Julian, wrote a work entitled "The Pearl of America," in which he treats in an extended manner of coca. He asserts that this plant possesses all the useful properties already noted. He cites in support of these a great number of cases, where jaundice and hypochondria had been cured by it, and relates the case of a missionary, well versed in botany, who had cured this last remedy by administering infusions of coca.

He also laments that the coca is not introduced into Europe, instead of tea and coffee. "It is," he observes, "melancholy to reflect that the poor of Europe cannot obtain this preservative against hunger and thirst, and that our working people are not supported by this strengthening plant in their long-continued labours!"

According to Weddell, coca produces a gently excitant effect, with an indisposition to sleep, in these respects resembling tea and coffee. He testifies further that it supports the strength for a considerable time in the absence of food, but that it does not entirely supply the place of nourishment, and probably in this respect also acts like the substances referred to. The Indians while chewing it pass whole days in travelling or working without food, but they eat freely in the evening after their labours are done. He also states that persons unused to it are liable to unpleasant effects from its abuse, and he knows of instances of hallucinations apparently resulting from this cause.

The Indians, according to Von Tschudi, looked upon the coca as a sacred and mysterious plant. It formed part in their religious ceremonies, and they burned it upon their altars as a pious offering to their deity. The priests chewed it at their prayers to conciliate the benevolence of the gods, and blessed it, to obtain every worldly advantage. The Indians, according to the same author, filled the mouths of the dead with coca leaves for the purpose of securing their salvation; and some have affirmed that this custom still exists among them, and that when an Indian meets with a mummy he kneels down with devotion and places around it a handful of coca leaves.

Like all vegetable narcotics and stimulants, coca, when used in excess, produces deleterious effects upon the system. The inveterate chewer of coca is known at the first glance.

His unsteady gait, yellow skin, and sunken eyes encircled by a purple ring, his quivering lips, and his general apathy, all bear evidence of the baneful effects of the coca juice when taken in excess. A confirmed chewer of coca is called a "coquero," and he is said to become occasionally more thoroughly a slave to the leaf than the inveterate drunkard is to spirituous liquors! Its first evil effect is to weaken the digestion; it then gradually induces a disease named the "opilation." Biliary affections, with all the painful symptoms which attend them in tropical climates, and gall-stones are frequent and severe. The appetite becomes exceeding uncertain, till at length dislike is created for all food! Then dropsical swellings come on, and the patient flies to brandy for relief, and thus drags out a few miserable years till death relieves him. (Pöppig.)

This description is sufficiently repulsive, but it exhibits only the dark side of the picture. A similar representation could be made truthfully of the evil effects of wine or beer in numerous cases, without thereby implying that these liquors ought either to be wholly forbidden or given up. Dr. Weddell states that he met with none of the extreme cases mentioned by Pöppig. "The chewing of the leaf," he says, "produces ill effects sometimes upon Europeans who have not contracted the habit in their youth," and in two or three cases which came under his observation he ascribed to the abuse of it, "the production of a peculiar aberration of the intellectual faculties characterised by hallucinations."

Von Tschudi also, as the sum of his inquiries, says: "Setting aside all extravagant and visionary notices on the subject, I am clearly of the opinion that the moderate use of coca is not merely innocuous, but that it may even be very conducive to health. In support of this conclusion, I may refer to the numerous examples of longevity among Indians, who from boyhood have been in the habit of masticating coca three times a day. Cases are not unfrequent of Indians attaining the great age of 130 years, and these men, at the ordinary rate of consumption, must in the course of their lives have chewed not less than 2,700 lbs. of the leaf, and yet retained perfect health! Even the Indian "coquero," who takes it in excess, reaches the age of 50 years.

It is consumed more abundantly, and with less baneful effects, in the higher Andes than in the lower and warmer regions. It is certain that the Peruvian Indians have always ascribed to it the most extraordinary virtues. Clusius, writing in 1605, says that when he asked the Indians why they always had the coca in their mouths, the answer was that, when using it, neither hunger nor thirst annoyed them, while their strength and vigour were confirmed.

A council of the Church condemned it in 1567 as a "worthless substance, fitted for the misuse and superstition of the Indians," and a royal decree in 1569 condemned the idea that coca gives strength as "an illusion of the devil." But these fulminations were of no avail. The Peruvians still cling to their esteemed national leaf, and the owners of mines and plantations, discovering its efficacy in enabling their slaves to perform the heavy tasks they imposed upon them, soon became its warm defenders. Even churchmen at last came to regard it with indulgence, and to recommend its introduction into Europe!

Dr. Don Pedro Nolasco, in a treatise published in 1793, insisted upon the advantages which might be derived from the introduction of the plant into the European navies. More recently, Von Tschudi has also recommended it as fitted "to afford a nutritious refreshment to seamen in the exercise of their laborious duties, and to counteract the unwholesome effect of salt provisions," and lately Professor Schlechtendal, who has also written upon the coca, after commending it as "a tonic, soothing and nutritious, as preventing weakness of the stomach, and the obstructions, colic, and hypochondria, to which such weakness gives rise," adds that, "without doubt, the leaves might be usefully employed in Europe."

Mr. E. B. Shuttleworth has given an account showing the invigorating effects of coca, as proved by the members of the Toronto Lacrosse Club.

We have no accurate data from which to form an estimate of the actual weight of coca leaf collected and consumed in Bolivia and Peru. One authority gives as indisputable the fact that the annual production and consumption in South America falls little short of 100,000,000 lbs.

Pöppig estimates the money value of the yearly produce to be about 4,500,000 Prussian dollars, which at 1s. a pound, the price it yields to the grower, would make the annual production about 15,000,000 lbs. Between these two extremes the truth is doubtless to be found.

To illustrate further: Dr. Weddell informs us that the province of Tongas, in Bolivia, in which the coca is much cultivated and esteemed, alone produces 9,600,000 Spanish pounds. The total produce therefore is, without doubt, much beyond the 15,000,000 lbs. deduced from the statements of Pöppig. This approximation is sufficient to show us its importance to the higher regions of South America, in an agricultural and commercial as well as in a social point of view.

The *Chemical History* of the coca leaf is quite interesting. Some investigation has been made of the proximate constituents of the leaf, with results, though not entirely satisfactory, yet sufficient to show that the physiological effects of the leaves are jointly due to *three* different constituents, viz., an odoriferous resinous substance, a fixed alkaloid, and a species of tannic acid (cocatannic) with which the alkaloid "cocaina" is associated in the leaf.

As they reach this country the leaves are coated with a resinous or waxy substance, which is only sparingly soluble in water, more so in alcohol, and readily so in ether. When the leaves are digested in ether or alcohol a dark-green solution is obtained, which, on being evaporated in the open air, leaves a brownish resin, possessed of a powerful, peculiar, and penetrating odour. When exposed for a length of time to the air this resinous matter diminishes in quantity, and gradually loses the whole of its smell, leaving a fusible, nearly inodorous matter behind.

Ether or alcohol therefore extracts at least two substances from the leaf, one of which is very volatile, and has a powerful odour. It is probable that in this volatile substance the narcotic qualities of the leaf reside. And this is consistent with the fact that the leaves gradually lose their smell and taste, and, after a lapse of time, say two years, are comparatively inert and worthless. As before mentioned, it is usual to make up the leaves into hard packages covered with fresh hides, which shrink and compress the whole as they dry. But notwithstanding this close packing, nearly resembling that of hard-pressed hop packages, they invariably give off their volatile ingredients as do hops, and by transport and keeping continually diminish in value and estimation. The volatile resinous matter, extracted as above, is, therefore, one of the most important ingredients of the coca leaf.

Various attempts have been made to analyse the coca leaf by different chemists. The most thorough examination seems to be one made by Dr. Albert Niemann, of Goslar (Saxony), who succeeded in isolating a peculiar alkaloid, to which he gave the name *cocaina*.

The alkaloid cocaina is not an article of frequent use by the medical profession, although a statement has been circulated of its being made by a chemist of La Paz (Bolivia, S. A.), and given freely in the treatment of intermittents. Its high price (selling in New York for one dollar a grain!) would prevent its frequent use as a remedial agent, and the pharmacist necessarily be driven to resort to less expensive preparations of the drug.

The ready volatility of at least one of the active ingredients, and the susceptibility of its constituents to change and deterioration from exposure to heat or air, point unmistakably to the desirability of fluid extracts or concentrated tinctures, to be made with cold solvents.

It has been my custom to cause the leaves to be ground in a drug-mill to a suitable degree of fineness together with one-third their weight of crushed sugar, thereby securing a more ready and uniform comminution of the leaf. The powder was next introduced into a glass jar, and covered for twelve hours with a menstruum of equal parts of strong alcohol and water, and then introduced into a percolator, and a fluid extract made without the use of heat, expressing strongly at least twice in the process.

I have also made a fluid extract with the employment of an alkalinised menstruum, consisting of half a drachm of bicarbonate of potash added to a pint of diluted alcohol, and the process completed as above. The taste of the result is not so pleasant as in the former process, and the result of the experiments conducted with the fluid extract made in

this manner has not been so convincing as to suggest it for the ordinarily made hydro-alcoholic fluid extract.

The dose of the fluid extract is from 20 to 30 drops, to be taken in water, wine, or other spirituous liquor, if desired. Elixirs, syrups, cordials, &c., can be readily made by mixing in suitable proportions the fluid extract with syrup, plain or compound elixirs, cordials, &c.

Chemistry.

THE RARE METALS.

DR. THEODOR SCHUCHARDT, of Goerlitz, sends to the *Chemical News* the following quotations for a few rare metals:—Cerium, 20s. per gramme; lanthanum, 40s. per gramme; and didymium, 30s. per gramme. These are obtained in globules by electrolysis. Thorium, in powder, is 36s. per gramme.

NORWEGIUM.

DR. TELLEF DAHL announces in the *Chemical News* the discovery of a new metal, which he names norwegium. It was detected in a sample of copper-nickel. Its sp. gr. is 9.441; its equivalent appears to be 145.9. It gives a precipitate with sulphuretted hydrogen in acid solutions, and is a white metal with a brownish cast.

SULPHURETTED HYDROGEN.

ACCORDING to a German authority (*Pharm. Zeitung*) a very handy sulphuretted hydrogen apparatus may be made by putting into a large test tube, fitted with a cork and delivery tube, a mixture of equal weights of paraffin and sulphur. On applying heat hydrogen sulphide is given off, and on withdrawing the lamp the evolution of gas at once ceases, so that the same mixture may be used many times and will last for a long period.

SILICIURET OF IRON.

THE committee of chemical arts of the French *Société d'Encouragement pour l'Industrie Nationale* has undertaken to examine into the uses which can be made of the new compound siliciuret, of iron. Professor Lawrence Smith sent them an ingot weighing about 3 kilogrammes (6.6 lbs.), with a colour like platinum, and a specific gravity of 6.5. It is easily broken by the hammer, does not rust in the air, is not corroded by concentrated nitric acid, and scarcely by any re-agents, except fluorhydric acid and melted alkalis at a red heat.

CARBOLIC ACID A DEOXIDISER.

DR. JOHN DAY, of Geelong, read a paper before the Medical Society of Victoria, on May 7, "On Certain Curious Points in the Chemistry of Carbolie Acid." He mentioned that German physiologists had shown it to be a constant constituent of the urine, a normal constituent of the bowel, and one of the products of the putrefaction of albumen. He then proceeded to prove a fact which he had himself observed, that carbolie acid is a powerful deoxidising agent. To show this he first oxidised some guaiacum resin by means of permanganate of potash, black oxide of manganese, and other agents, changing the colour of the resin from reddish brown to a deep blue. The normal colour was restored by the addition of carbolie acid. A drop or two of the acid added to a solution of permanganate of potash also at once reduces and decolorises it. The addition of carbolie acid to a solution of persulphate of iron at once reduces the latter to the protosulphate, as is shown by the blue colour then producible on the addition of a solution of red prussiate of potash. Dr. Day believes it possible that this deoxidising property of carbolie acid may offer a fair explanation of its action in the antiseptic treatment of wounds, as it has been clearly shown that putrefactive change only takes place in the presence of bacteria, and further that bacteria are dependent on oxygen for their existence.

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SEE PAGE 66.

SEE SEABURY & JOHNSON'S Advertisement of INDIA.
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CARTNER'S PATENT PILL COATERS.

See page 25.

ELLIMAN'S EMBROCATION. See page 53.

EDITORIAL NOTES.

PRESCRIBING AND DISPENSING.

THE Roehdale chemists have done service to the fraternity
generally by the action which they commenced in the early
part of this year, and which we fully reported in our last
number.

Their purpose was to lay before the medical profession of
their town the advantages which, as they think, would result
from a more complete severance of the duties of the
physician and the pharmacist. They obtained information
from all parts of the country, they tabulated it, and laid all
their conclusions and arguments before a conference, at
which a majority of medical men of the town assisted. For
the moment their efforts have failed, but immediate success
was hardly to be anticipated.

The chemists of other towns might with great advantage
follow the example set them by those of Roehdale. In many
places the doctors go on dispensing simply because they have

got into the habit of doing so, and because they have never seriously thought of the benefit they might gain by abandoning it. A general stirring up of the question would cause it at least to be thought over in some quarters, and this would be followed, sooner or later, by the adoption of the experiment by a few of the brightest of the medical practitioners, an insertion of the thin edge of the wedge which would lead to further consequences. Suppose a town with 10 or 12 doctors, all dispensing their own medicines. The one who first steps out of the old-fashioned routine and writes his prescription will at once secure for himself a special rank and reputation. It will be curious if some of the others do not soon follow his lead.

The little profit which the doctor gains by his dispensing ought not to be worth the time and labour which he spends on it. His attention would be more concentrated on each case as it comes before him if he could completely separate his thoughts from the patients he had seen just previously, and in this he would be much aided if by writing his prescription the duties connected with his visit were finished. Weariness of mind and body must be the result, if, after a laborious round of visits, the doctor must go and drudge in his dispensary for another hour, and it is hardly to be wondered at if he chooses for himself the less tedious process of dispensing, when sometimes perhaps the patient would benefit by a more carefully prepared remedy.

The Rochdale chemists have gone a good way towards proving that both prescriber and dispenser would benefit by a separation of their respective duties; somebody of course would have to pay for it; that part of the scheme would fall on the public. But it is a mistake to suppose that therefore the public would suffer. On the contrary, they would certainly secure better and more faithful dispensing, and the poorer classes at least need not be taxed at all. But besides this the public generally has a supreme interest in the reform suggested, in the protection they would thus acquire against the possibility of undiscoverable accident or foul play. This is a delicate point to allude to in any conference with the medical profession, but it must not be ignored. If fatal accidents ever do occur as a result of medical dispensing, it is hardly likely that the person most interested next to the patient will proclaim them abroad; and rarely can they get known otherwise. The Rugeley murders of some 20 years ago prove that the second contingency which we suggest is not an impossible event. It is on such considerations as these that the separation of prescribing and dispensing is enforced by law in most of the countries of the continent, and it may be that some day our own Legislature will pass a similar law. Meanwhile moral persuasion may fairly be employed, and every chemist can advance the interests of the whole body by advocating the system whenever he has the opportunity, and especially by doing his own dispensing so excellently that its superiority may be manifest.

FOREIGN QUININE IN AMERICA.

THE abolition of the duty on foreign quinine occasioned, as we pointed out last month, a sudden and considerable rise in the price of the product here. It made the bark holders as well as the quinine makers firm in their demands. The circumstance that American dealers to some extent expected the abolition of duty, and prepared for it by keeping stocks as low as possible, further assisted the advance. Consequently the removal of the duty brought about for the moment an increase instead of a reduction of price. Some of the red-hot protectionists have been not unwilling to make capital out of this fact; but the causes of the rise are too obvious to let it have any weight. The more certain

result will be an agitation for the removal of duty from other products. The manufacturers themselves are now claiming a removal of the duty on East India and other cinchonas, on which they have to pay 10 per cent.; the Peruvian they already get free. One pharmaceutical journal, while apparently questioning the new policy, makes, nevertheless, the brilliant discovery that "should the abolition of the tariff on quinine lead to a considerable reduction in its retail price, we know no valid argument with which to oppose an effort to remove the Customs duties from all official substances used as medicines." Perhaps the editor of *New Remedies* will explain what valid arguments he would have for retaining the duties on substances not official, or on substances used for other purposes than for medicine. Even if retail prices should not be reduced, though in a land of free competition this must occur, we should like to know of any valid argument why manufacturers are better entitled to the extra profit than retailers.

A Philadelphia journal, commenting on the repeal, quoted Mr. Farr, of the firm of Powers & Weightman, as having remarked that the removal of the duty would not in the least affect the cost of quinine to the consumer. He stated that druggists charged 3c. per grain for quinine, and thus made, allowing for waste, about \$13 per oz., or about \$9½ profit when they sold pure quinine, or \$11 profit if they palmed off cinchonidine for the more expensive article.

A meeting of the retail druggists of Philadelphia followed this report, and they indignantly contradicted Mr. Farr's assertions. They said that their charge was not more than 1½c. or at the outside 2c. per grain, that it was influenced by the wholesale price and by competition, and that if Mr. Farr had personal knowledge of anyone who practised the fraud he had spoken of it was clearly his duty to expose him. They had themselves no such knowledge, and were determined to defend the profession from what they believed to be a false accusation.

It must be understood that the Act of Congress does not repeal the duties on other cinchona alkaloids. At latest advices English, French, and German quinines were being imported into New York at the rate of from 10,000 to 12,000 oz. per week.

THE PHARMACEUTICAL CONFERENCE.

THE following are the titles of papers which may be expected at the forthcoming Conference at Sheffield:—

- "Report on the Aconite Alkaloids," by C. R. A. Wright, D.Sc., F.C.S.
- "The Capacity of Different Organs to Absorb and Retain Arsenic in Cases of Chronic Poisoning," by N. P. Hamberg, M.D., H.M.P.S.
- "The Growth and Development of Ergot," by W. W. Stoddart, F.I.C., F.C.S.
- "The Application of Chloroform in the Testing of Drugs," by Louis Siebold, F.I.C., F.C.S.
- "Note on the Specific Gravity of Liquids," by Louis Siebold, F.I.C., F.C.S.
- "Proximate Analysis of the Rhizome of *Zingiber officinalis*," by J. C. Thresh, F.C.S.
- "Soluble Essence of Ginger," by J. C. Thresh, F.C.S.
- "The Polarimeter and its Use in Pharmacy," by C. Symes, Ph.D.
- "The Assay of Commercial Disinfecting Powders Containing Carbolic Acid," by A. H. Allen, F.I.C., F.C.S.
- "Notes on Petroleum Spirit," by A. H. Allen, F.I.C., F.C.S.
- "Cinnamon Bark," by Mr. A. H. Jackson.
- "The Gelatinisation of Tincture of Kino," by Mr. T. H. Bamford.
- "Amylic Alcohol and Amylic Nitrate," by Mr. Dott.
- "Extraction of Pilocarpine," by Mr. A. W. Gerrard.

"Anhydrous Air as a Therapeutic Agent," by G. A. Keyworth, F.C.S.

"Quillaia Bark, its Chemical Composition and Use in Pharmacy," by Mr. H. Collier.

"Note on Aricine," by John Eliot Howard, F.R.S.

"The Chemistry of Chaulmoogra," by J. Moss, F.I.C.

"The Determination of Water in Iodine," by E. Davies, F.I.C., F.C.S.

"The Presence of Tannin in Gentian Root," by E. Davies, F.I.C., F.C.S.

It may be as well to repeat here that the Conference will open at 10.30 A.M. on Tuesday, August 19, at the Freemason's Hall, Sheffield, when the President, Mr. Schacht, of Clifton, will deliver an address. The reading of papers will occupy the rest of Tuesday and Wednesday, while on the following day, August 21, an excursion into Derbyshire will be offered by the local pharmacists to their guests. Gentlemen intending to be present will do well to write to Mr. H. W. Maleham, the local secretary, 7 West Bar, Sheffield.

A programme which we have received from Sheffield indicates that the local committee have spared no trouble to fill the time with pleasurable and profitable occupation. The most noted of the Sheffield factories will be opened at certain hours for the visit of members of the Conference. Among these will be the famous armour-plate works of Sir John Brown & Co., and the equally-noted cutlery factory of Joseph Rodgers & Sons. The Botanic Gardens and the Athenæum Club are to be at the service of the Conference, and the excursion on Thursday will include Owl Bar, Froggatt Edge, Culver, Bakewell, Haddon Hall, and Chatsworth. A luncheon will be provided at Haddon Hall, and the whole trip will wind up with a "high tea" at Barlow.

REPORTING THE PHARMACEUTICAL COUNCIL MEETINGS.

THE system of reporting the meetings of the Pharmaceutical Council, as at present practised, has again been subjected to its usual periodical criticism. It must be obvious that a method which so often needs to be tinkered, and which seems to satisfy nobody, can hardly be supposed to have reached perfection. We share with the vice-president of the society some foggiess as to the reformatory effect of the new rule which Mr. Symes has induced the Council to accept. The resolution directs that so much of the committee work of the Council as the Council itself may see fit shall be published for the edification of the outside world. We fail to discover any novelty in this concession. At any rate, it by no means meets the desires of those who complain of the principle on which the reports are constructed. The objection entertained against those which now appear arises solely from the fact that they are controlled somewhere. Where the control is exercised seems to be somewhat mysterious, but it is understood that somebody regulates the tap, and it is generally felt that any influence of this sort must check faith in the reports as a whole. No doubt some discussions ought to be private, and no difficulty need occur on this point. Cabinet meetings of the Council can be held, or, as the custom has been hitherto, the members can resolve themselves into committee for any necessarily private discussion, but such reporting as they do permit ought to be beyond the suspicion of interested interference. The Councillor seems to be nervously anxious to get credit for all the work they do, and yet at the same time childishly eager to play at diplomatic secrecy. Their unjust and ungenerous suspicions cause them to refuse to accept the rational solution of the difficulty by the admission of the reporter of a journal as anxious, if not as able, to serve the trade as themselves.

THE BRITISH AND AMERICAN PHARMACEUTICAL ASSOCIATIONS.

It is commonly said with partial truth that comparisons are odious. It is quite as true—it is, perhaps, more true—that comparisons are useful. Comparison lies at the root of emulation and nourishes it, and so is directly concerned in competition and progress, whether of individuals, classes, or nations. What can it do for pharmacy? The thought is suggested by a cumbersome tome of 1,000 pages, purporting to be the "Proceedings of the American Pharmaceutical Association." Its appearance is quickly followed by a list of papers to be read at the Sheffield meeting of the British Pharmaceutical Conference, and the materials for comparison, with all its attendant benefits, are so providentially provided that who could disregard the omen and refrain? To be fair, however, and at the same time admit the logic of facts by leaving unpublished papers in the pigeon-holes of the Conference, we must go back to the Dublin meeting for fit matter to compare with the voluminous American report, and even then, not to be markedly invidious, our comparison must avoid the particular and seek the general.

How industrious these Americans are! half unconsciously brushes over the mind on taking up the weighty octavo. What interest they take in their profession! is a more defined idea, which remains till distinctness is lost in the multitudinous impressions accompanying a glance through the pages. One grows conscious that either the title is defective or the book is roundabout. How does a report on the progress of pharmacy, occupying 406 pages, become a part of the "Proceedings," &c.? Doubtless for the reason that it is presented to the Association at its annual meeting. We believe that an attempt has been made on behalf of the British body to have the manuscript of the "Year Book of Pharmacy," which corresponds to the aforesaid report, laid on the table at the annual meeting of the Conference—with what measure of success we cannot say. The American Report speaks a whole volume for the diligence of Mr. C. Lewis Diehl, the compiler, who, with charming *naïveté*, informs his readers that the general depression of business has allowed him to extract papers more thoroughly, and more of them. It is as perfect of its kind as can well be imagined or desired, and is embellished with numerous cuts of apparatus and notions, which heighten the interest excited by the text. British writers might copy this feature with advantage. Our transmarine compeers are strong in reports, and these are more numerous than we can well speak of. There is, for instance, one on the cellar and store-room, which would be of doubtful value to a plough-boy or clerk just come into possession of a drug-store, and of no value at all to a pharmacist learning his business in the usual way. Squibb's report on "Fluid Extracts by Reperculation" is thoroughly exhaustive, but, we fear, goes over the heads of those to whom it is addressed, and errs by too much detail. A report on the "Preparation of Chemicals" is made to include all the galenicals, with about 20 definite chemical bodies, and resolves itself into three pages of recommendations to prepare them and save in fluid extracts, for example, 75 per cent. Wholesale druggists in the States must be having a good time of it with these profits. There are other special reports bearing the titles "Miscellaneous Notes;" "Extractum Glycyrrhizæ Fluidum;" "Pharmaceutical Preparations of Coca;" "Resin of Podophyllum;" "On Sachet Powders;" "Erythroxylon Coca;" "Colours for Cerates;" "The Preparation of Salts of Berberina;" "Morphimetric Processes for Opium;" "The Valuation of Tincture of Opium;" "Trial of various Schemes for the Separation and Quantitative Estimation of Quinia, Quindia,

"Cinchonia, and Cinchonidia," in which much practically useful information will be found, sometimes given with a sufficiency of detail, sometimes with commendable brevity.

These reports, it may be said, are answers to queries put forward by the Association, and accepted for reply by members at least a year previous to the meeting which receives the reports. The Blue List of the Conference aims at providing subjects for papers in a somewhat similar way, but, through perversity or native originality, the assistance it is capable of affording is not often accepted.

Verbatim reports of the discussions and conversations arising out of the American reports are given in a style which carries one directly into the presence of the speakers, and enables a far distant reader to cherish the belief that he is assisting (in a Gallic sense) at the Association meeting.

The highly scientific papers of Dr. Tilden and Dr. Wright find no parallel in the reports presented to the American Association, nor do we feel that the strictly pharmaceutical literature of the latter reaches the level of that annually provided by the Conference. True, there is more of it, and it may be argued by those concerned that quantity makes up for lack of quality—the balance would, indeed, show on the other side if quantity be credited; and it may be justly claimed for the New World pharmacists that they show a class industry, and a personal industry in the interests of their class, which might be advantageously imitated in the older community. Over there pharmacy is a moving, living, growing thing, filled with a vigorous life in every particle of the body, but yet with the imperfections of immaturity. Here it lives and moves, but the movement has not enough of progress in it, and the central organs have not retained the power to quicken extremities stiffened by age and inaction. The heart and lungs are working bravely, and ere long the influence will be generally felt, but can recuperation be expected where the food is deficient and not capable of healthy assimilation? where the Preliminary examination contributes little to the growth of parts, and permits excrescences, if it does not encourage them?

IMPORTANT INLAND REVENUE NOTIFICATION.

Patent medicines may be sold by licensed vendors in small quantities under certain conditions.

THERE has always been some doubt as to the strict legality of the sale of a part of the packet of a patent medicine. We have previously published letters from the Board of Inland Revenue authorising the sale of Steedman's and Tedman's powders singly if taken from a duly-stamped packet, but it was generally supposed that this was a special favour granted by the Board. The following will, however, make clear how the law is regarded at Somerset House. The first extract is from a letter sent to Mr. Footton, chemist, Luton, in reply to a query which he had addressed to the Board respecting the sale of Kaye's Forsdell's pills, which, it appears, are in demand in that locality in small quantities. The solicitor replies (July 25, 1879):—

A duly-stamped box of these pills may be broken open and the contents sold in small quantities unstamped by a licensed vendor of patent medicines, provided they are merely wrapped in a piece of paper at the time of sale and are not delivered to the purchaser in a packet, box, or other enclosure.

In reply to a question of our own as to whether the regulation named in the above-quoted letter applied equally

to all patent medicines, the solicitor writes (July 31, 1879):—

..... All medicines which are liable to stamp duty, and which have been sold duly stamped by the original vendors thereof, may be re-sold in smaller quantities by licensed vendors without being re-stamped. If, however, the re-sale should be made in any "packet, box, bottle, pot, phial, or other enclosure," such enclosure would apparently fall within the charge of stamp duty imposed by the Act 44 George III., cap. 98, and the retailer would be strictly bound to show that the article sold by him had been previously sold to him under the proper stamp.

POISONED BY LETTUCE!

ON July 18 an extraordinary statement was made before a coroner's jury. A joiner, named M'George, died at Liverpool on July 14. The post-mortem indicated apoplexy. The man had eaten some lettuce for his tea the night before; the doctor had probably heard of lettuce-opium, and actually swore that the apoplexy had been induced by the quantity of opium contained in the lettuce, which would be dangerous to an elderly person! The jury found that death had resulted from poison (!) but whether or not it was contained in the lettuce there was not sufficient evidence to show.

LADY PHARMACISTS.

THE *Canadian Pharmaceutical Journal* comments editorially on the recent division at the annual meeting of the Pharmaceutical Society respecting the admission of women as members:—"A majority of three out of so large a number is not much to be jubilant over, and the next vibration of the balance may show a different result. We feel, personally, quite inclined to side with the ladies. As sweethearts, wives, and mothers, they are, as the late Artemus Ward has said, 'an unmitigated success,' and though it may be that nature has given them slight advantages in these capacities, there is certainly no reason why they should be bound down to spheres of action so narrow and confined. The practice of the profession of pharmacy requires, above all, a mind stored with hard-edged facts; a judgment sober and matured; a manner free from all impetuosity; and habits accurate and precise. These, as we all must know, are very strongly marked characteristics of the daughters of Eve, and when we call to mind the fact that our great mother herself was of a decidedly experimental turn, and was actually the first to speculate on and investigate the properties and action of the natural products of vegetable origin by which she was surrounded we can no longer deny the right of the sex to follow up the profession which descends to them as it were by inheritance."

THE "POP" RIVALS.

THE aerated water business has the inestimable advantage of having its interests looked after by two special journals, as well as by several others, like our own, which endeavour to give it a certain share of attention. One of these special journals is conducted by a Mr. E. M. Adams, a gentleman who seems to suffer exceptionally from the ingratitude and falseness of the human race. We are not well posted in all Mr. Adams's quarrels, but we notice that these seem to form to a large extent the basis of the literature provided for the trade by his *Mineral Water Trade Recorder*. A new injustice has just been sprung on this much-enduring martyr. For several years Mr. Adams has worked up the annual exhibition of aerated-water machinery. For his exertions in the matter he has awarded himself so much applause that there has been hardly room for anyone else to add a word of compliment. But with all due respect for what he has done we cannot quite fall in with the theory which he now seems to

desire to propagate, namely, that without his co-operation no exhibition at all approaching or resembling his has any right to exist at all. Lately some other promoters have announced an exhibition to be held at the Agricultural Hall, on September 29 and five following days, of machinery, fittings, and products used or sold by licensed victuallers. Aërated waters and the machinery used in making them, not unnaturally form one section of this exhibition. Out comes another circular, signed by Mr. Adams, denouncing "this wretched imitation of the only legitimate exhibition held annually by Mr. E. M. Adams," and assuring exhibitors that this "untimely and unseasonable attempt" "cannot prove of benefit to them from the fact that the season will not have terminated so as to admit of customers visiting London on the dates advertised." We may add that Mr. Adams' original and only genuine exhibition will be held on or about October 21 next.

THE VALUE OF MEDICAL ATTENDANCE.

AN interesting trial occurred at the Civil Tribunal of Paris one day last month. M. Catallan, reckoned to be the richest homœopathic chemist in the world, and proprietor of six homœopathic pharmacies in Paris, was sued by an eminent surgeon, Dr. Mallez, and by his junior colleague, Dr. Jardin, for certain fees which they claimed to be due to them. Some time ago M. Catallan suffered excessively from the stone, and placed himself under the care of Dr. Mallez. The case was so serious that Dr. Jardin had also to be associated in its conduct, and the latter, it was stated, passed 32 nights with the patient. The operation of lithotomy was performed by Dr. Mallez, and ultimately M. Catallan was restored to complete health. A letter from the latter was produced in Court, in which he had expressed his gratitude to the surgeon, and commented with admiration on his "marvellous skill." Thinking, no doubt, that he was paying a tolerably handsome honorarium, he offered to his benefactors the round sum of 10,000f. (400l.). But Dr. Mallez was not satisfied with this. He said that he willingly gave his gratuitous services to the poor, and charged no more than they could afford to persons in moderate circumstances, but he did not care to be "taxed" by a wealthy client like Mr. Catallan. The counsel for the plaintiff of course made an effective speech, picturing the defendant on his bed of suffering, willing to give all he possessed for a little ease, and now that he had got it, haggling about the price. Dr. Mallez claimed 12,000f. for himself, and 5,000f. for his colleague. The defendant denied that he was so rich as had been represented, and ultimately both sides agreed on the recommendation of the Court to leave the question to the decision of three experts, Drs. Pioget, Langier, and Bergeron. How it was settled has not transpired. We do not say it was intended, but we cannot help seeing that the result of the trial has been to brilliantly advertise Dr. Mallez and his "marvellous skill."

A RUSSIAN PROFESSOR ON ENGLISH PHARMACY.

THE Russian professor, master of pharmacy, and doctor of philosophy, A. Poehl, of the Imperial Medico-Chirurgical Academy of St. Petersburg, has lately published, in the German language, a report of the pharmacy of the late Paris Exhibition, and in response to our request he has politely furnished us with a copy of his pamphlet. The learned gentleman's report is marked by discrimination and pharmaceutical knowledge, but it is equally distinguished by an

apparently violent Anglicopharmacœuticophobia, which is not tempered with the soundest acquaintance with facts.

The first section he describes is that of the French department. Everything there seems to meet his approbation, and is worthy of his remark, even down to some bronze ornamentation on the glass cases. Almost the only French exhibit which draws forth some unfavourable criticism is the Fer Bravais, and this not because the preparation is unsatisfactory, but because it has been introduced by advertisement. "The pharmaceutical specialty is an old evil in France, and the *reclame* a necessary consequence thereof." There is a good deal in the way of putting things. It is quite clear that in France the *reclame* is a crime against pharmacy; when we come to poor England it becomes a crime of pharmacy. Passing from the French department, the professor seeks the foreign sections, and commences his investigations with British India. The term, England's *schatzkammer*, or treasure chamber, by which he describes that empire, is, we fear, only true in a sense the reverse of his meaning, but it may be taken by Russophobists to indicate the irrepressible India-hunger attributed to the Muscovites. Here he was especially interested by the beautiful collection of *cinchona* barks, which he thinks were not made so prominent as they deserved to be. The British exhibits which he describes are those of Messrs. T. & H. Smith, which "attracted his attention before all"; T. Morson & Son, who, "among a beautiful collection of chemicals, exhibit gelsemin and phosphate of pilocarpin"; Savory & Moore, whose gelatine tablets of atropia, morphia, &c., and portable chemical laboratories are noted; Macfarlan & Co., whose "series of opium alkaloids, all of fine appearance," is mentioned, and who also exhibited a sample of a kind of Persian opium which the writer had been looking for for some years, and which had formerly reached St. Petersburg *via* Khiva. It yielded 16.2 per cent. of morphia. Kirby's glycecols are described as white elastic pastilles with dosed portions of medicines in each. "These glycecols represent to us an embryonic step in the development of elastic gelatine capsules and suppositories. In this respect, as in many others in pharmacy, Russia seems to have advanced beyond most other lands." Calvert's "well-known carbolic acid preparations" are named, and then John Richardson & Co.'s display of coated pills supplies a text for a tolerably long discourse on the defects of English pharmacy. This collection, he says, was very characteristic of England. There were more than 600 varieties, all similar in appearance, but distinguished by labels. The labels, he says, were not without interest, as some of them contained offences against Latin grammar. As an example he quotes:—

| | | | | | Grains |
|--------------|-----------------|----|----|----|----------------|
| No. 219.—Rp. | Phosphorus pur. | .. | .. | .. | $\frac{1}{10}$ |
| | Ferrum reduct. | .. | .. | .. | 3 |
| | Quinia sulf. | .. | .. | .. | ss. |
| | Strychnia | .. | .. | .. | $\frac{1}{5}$ |

This, he says, is a literatim copy, but the Germanic *sulf* for *sulph*, which is not likely to appear on an English label, makes us doubt the critic's reliability. He proceeds:—"The composition corresponds with the grammar. The medicinal action of all these preparations is explained, and each is recommended as a specific for some disease. Arsenic, antimony, and digitalis fill important rôles among these drugs. The object of these ready-made medicines is to make the public independent of the physician and of the pharmacist. The enterprise may seem a philanthropic one to some of the laity who are not competent to judge. I have myself met with Englishmen of education proud of these conditions, as indicative of their personal 'freedom.' Richardson's method is pretty similar to the secret medicine

swindle. It is true his medicines are not secret, but he recommends them for special cases. No limitation of sale of secret remedies exists in England for the protection of the public. No law forbids the open recommendation of an abortion drug. The secret medicine trade of England brings in a considerable sum of money, and, for fiscal reasons, consequently, the sale of poisonous and powerful remedies is allowed free course. The patent medicine dealer pays 2*l.* sterling (!) for his licence, and to every bottle, box, &c., attaches a stamp of varying value from 1*½**d.* to 20*s.* (!) corresponding with the price of the medicine, 1*s.* to 50*s.* No declaration of the composition of any quack medicine is legally necessary. A reform of this business moved in the House of Commons was defeated by the Government, not out of any abstract partiality for perfect free trade, but on account of the influence of the home and export dealers in these medicines, and because the amount realised from them was rapidly on the increase. In 1866 it brought in 57,336*l.* sterling; in 1875, 100,237*l.* sterling."

Reading on we find that the United States has followed England's example in respect to pharmacy to her own hurt, the result being an unknown mass of poisoning among the "free" citizens of that land. The pharmaceutical exhibition of America the doctor finds to consist very largely of pills, pills of all sizes and all colours, blue, he observes, being especially in favour. Wyeth's compressed pills, and the indigenous drugs shown by McKesson & Robins, he found of most interest.

The small pharmaceutical exhibit made by Greece is accounted for to a great extent by the baneful influence of English pharmacy and "the so-called British freedom" in the Ionian islands until 1864.

The description of the Russian section affords another opportunity of comparing the admirable state-ruled system in force there with the reckless uncontrolled free competition of England and America. To enforce his arguments Dr. Poehl quotes the results which "Analytiker Thompson" obtained three years ago, with a mixture containing iodide of potassium, and which he had dispensed by nearly 100 chemists. Those results were published in this journal in April, 1876. Such dispensing, Dr. Poehl argues, is the result of English free competition.

Dr. Poehl makes no mention of the English pharmacy law; perhaps he is unacquainted with it. Our quotation shows that he is unreliable in the matter of figures when he endeavours to give the substance of the patent medicine laws. And this is a curious fact to be noted: that professors who claim that their word should be taken as gospel truth when they deal with minute fractions in analytic researches, may make blunders to any extent when they report other subjects, without injuring their scientific reputation.

PATENT MEDICINES IN GERMANY.—It is stated in the *Chicago Pharmacist* that the United States Government recently applied to the German Government for information as to the number of patent medicines and the extent to which they were sold in Germany; and in reply were politely told that as Germany was now a civilised country patent medicines had no existence in it! It is quite certain that the German Government never returned any such impertinent reply to a civil application from another foreign office, nor is it at all likely that the United States Government made the superfluous inquiry. But if anybody in America wants to have some idea of the extent to which secret medicines are sold in Germany he might study our pages month by month, in which some hundreds of formulae for these have appeared. The *Chemiker Zeitung* denounces the proposed duty on patent proprietary medicines of 100*f.* per 100 kilos., on the ground that it implies official recognition of such articles.



AND

Literary Notes.

A CONTRIBUTION TO THE HISTORY OF PHARMACY.

Etat de la Pharmacie en France. Par E. Grave. Mantes.*
1879. Second notice.

THE materials on which this work is based become more abundant as the centuries grow older. When details are separated by considerable time or space they are easily grasped. When they become numerous they require grouping, or they only confuse. Unfortunately, the arrangement here is much like that "editing by tipping up the shafts," with which Carlyle falls foul. M. Grave's tendency to write *about* his facts somewhat obscures them. As in these later centuries we have only heaps of facts, no pictures, and not even sketches, we cannot outline the book, but must be content to pick out here and there the most interesting facts.

Among the laws and regulations to which pharmacy was subjected in the fourteenth and fifteenth centuries some are interesting.

In 1336 Philip of Valois enacted that the apothecaries among other things should show their laxative medicines, opiates, and eluctuaries to the doctors on demand. King John, in 1352, decreed that, "By these presents, and at all times, it is forbidden to all persons of all sexes and conditions to compound or administer any alterative medicine, syrup, elixir, or elyster in diseases which are fatal, or whose symptoms present a grave character; item, all opiates and all medicine whatever, even to give medical advice." This regulation was directed against quacks at the instigation of the regular practitioners, but its wording distinctly excludes the latter as well as all others from the practice of medicine.

In 1359 John published another edict, which said that no one shall be a master apothecary if he cannot read receipts. It gave minute directions for the inspection of drugs.

Physicians seemed to have stirred their potions immediately before administration with the medicinal finger. This, now called the ring finger, was supposed to contain an artery communicating directly with the heart, and could endure no poison.

Until 1637 the "Antidotary" of Nicolas Myrepsus, written in the thirteenth century, was the sole Pharmacopoeia. It was revised, reviewed, and corrected by the Faculty of Medicine at the beginning of the fourteenth century. By the middle of the fifteenth its insufficiency was perceived. In 1577 the Faculty of Medicine engaged to produce a new Pharmacopoeia, but none was published till 1637, the delay being caused by a series of political troubles.

The custom of placing gold leaf in Dantzic brandy and other liqueurs seems to be a relic of the belief in gold as a panacea.

An account of the King Louis XI. (1470) mentions a payment to Jean Cadure, apothecary, of Amboise, firstly, for two dozen leeches; secondly, for tin flasks for eau de rose and eau de fumeterre. Until 1574 brandy and other spirits were sold only by pharmacists.

In 1605 Louis XIII., then a child, wrote to "Monsieur, son papa," begging leave to withdraw from the garrison of Provence, for the soldiers, imitating him, were likely to strip the apothecaries' shops of his "dear" confection of roses.

As illustrations of the culture of pharmacists in the fourteenth century some cases are cited involving medical jurisprudence. In 1378 the Queen of Charles the Bad, King of Navarre, died suddenly. A suspicion of poison was set at rest, chiefly by Symon the Lombard, apothecary, of Evreux, who "eviscerated her, and saw all that she had within her body. . . . And by this was discovered that she had died of feebleness of heart, and so thought all her women."

In 1384 Charles the Bad persuaded one of a party of English minstrels to endeavour to poison the king of France and several of the royal dukes. The design was discovered,

* Nantes, in the heading of the former notice, is a misprint for: Mantes.

and a party of experts, surgeons and apothecaries, was called upon to report on a piece of arsenic found on the culprit. They reported that it was red arsenic, and described the symptoms, internal and external, of arsenical poisoning much as they would be popularly described at the present day. The antidotes which would have been available are also clearly indicated.

A little satirical work of the sixteenth and seventeenth centuries states that an apothecary had left such wealth to his son that the latter tried to become a Conseiller of Parliament, on which account there was a great row among Messieurs of the Parliament. In the sixteenth century the Parliament of Toulouse had ordered to be burnt all drugs which were found to be damaged or of bad quality at the half-yearly inspections. According to an ordinance of 1484 the would-be apothecary must pass through an apprenticeship of 10 years. He was then subjected to three tests. The first was a verbal examination lasting three hours. The next, called *Acte des herbes*, involved the recognition of every medicinal substance. The third, called the *chef d'œuvre*, consisted in making five important preparations. He had then to take the ancient oath. After the publication of the first Codex in 1637, the apothecary was required by his oath to keep every article mentioned in it, and every drug of foreign origin had on its entry into Paris to be deposited for 24 hours at least at the Bureau of the Communauté, where it was examined by the medical inspectors.

Thomas de Mayerne, physician to Henry IV., James I., and Charles I., having adopted the use of chemical preparations, after the system of Paracelsus and Van Helmont, was expelled from the Faculty. By a special decree the learned assembly forbade all doctors in the world to consult with him.

On November 7, 1487, before the separation of the apothecaries from the grocers, a decree confirmed the right of the latter to make and sell all the smaller preparations, of one or two simples with honey or oil, and the power of distilling and distributing all sorts of waters. In 1629 the sale of medications by grocers was restrained by decree of Parliament. In 1737 they were interdicted from selling waters, oils, and syrups, and the vegetable, Glauber's, and emetic salts, and from having in their shops any display of apothecaries' wares.

An ordinance of 1764, while confirming the previous decree, gave the grocers the liberty, not of making, but of buying and selling as articles of commerce, the four great compositions—theriaca, mithridates, confection of alkermes, and confection of hyacinth.

A decree of July 12, 1663, permits an individual to exercise chemistry at Montpellier, to open a shop there, and to sell chemical products, but obliges him to keep a register of the sale of dangerous substances. These restrictions of the sale of poisons did not become general till 1682.

Chapter 15 is devoted to an account of Nicolas de Blégné, a man who seems to have anticipated at the close of the seventeenth century the form of advertisement which the nineteenth century finds most effectual.

He published a handy book, "*Le Livre Commode*," under the pseudonym of Abraham du Pradel, which book is a sort of directory of doctors, enumerating under various titles—as "Ordinary Doctors," "Empirical Doctors," "Medicinal Substances," &c.—the names, addresses, and specialties of the best physicians and apothecaries of Paris. Some of the entries are here translated.

"M. Helvetius, the Dutch physician, who gives an emetic powder for looseness of the bowels and dysentery, lives in Rue Serpente." For this man's connection with ipecacuanha see the "*Pharmacographia*," page 332.

"Empirical Medicine.—This form of medical treatment is that which is practised by certain, whose study has not been regular enough to lead to a degree, and who found their practice chiefly on experience of the results of certain recipes. At present only priests and ecclesiastics practise this kind of medicine at Paris, as, for example, M. the Abbot Guiton, who lives, at present, at the Arsenal."

"M. Rouvière, apothecary in ordinary to the King, the camps, and the armies, who has made two public preparations of the Theriaca andromachi with general applause, sells also a vulnerary water which is of great virtue in arquebus (gun-shot) wounds; Rue St. Honoré, where he has a shop of extraordinary convenience."

About a dozen apothecaries are mentioned, and then M. de Blégné fils, apothecary to the King, on the Quai de Nesle. This gentleman, if the space he occupies is proportionate, has as large a business as all the others put together. He alone possesses the original secret of the Orvietan; he sells purgative draughts, vulnerary water, an anodyne water which suppresses with surprising promptitude toothache, colic, rheumatism, sciatica, gout of the feet and hands, and pains of all kinds; several infallible remedies for hernia, and so on. "All these remedies are sold in sealed bottles and boxes, labelled with their virtues, [testimonials?], and with directions for use. A solvent person who knows the value of these remedies binds himself, on demand, to return the price to patients who are not cured, provided they agree, on their part, to pay him double the price when a cure is effected."

"Le sieur Guyon, druggist and grocer, Place Maubert, imports live reptiles from Poitiers."

All these recommendations are made pseudonymously, but if such a thing were attempted now it would be certain to give offence. De Blégné published his first handy-book in 1691; a second edition in 1692 was suppressed, and has become extremely rare. It has been republished by M. Ed. Fournier in the "*Bibliothèque Elzévirienne*," and from this reprint the citations are made.

The three last chapters treat the new products introduced by the discovery of America, pharmacy in the drama and in caricature, and military pharmacy of the eighteenth century, and the foundation of the College of Pharmacy.

The place this book should occupy in the pharmacist's library is that next the "curiosities of literature." It aspires to no high rank, and though the author fails to give us more than indications of the social standing of the pharmacist at different periods, yet he has made an interesting work, well worth the attention of the craft. The typography and general get-up are essentially French, though of a good class. The most serious complaints we have to make are that the author has given no index, and that the references in the foot-notes are vague and uncertain in the extreme. References, not intended for use, are mere pedantry, and anyone who attempts to follow out those given here will feel inclined to give them no other name. Every one who publishes a book without an index is a candidate for literary execution.

On the Origin of the Laws of Nature. By Sir Edmund Beckett, Bart., LL.D., Q.C., &c. London: Society for Promoting Christian Knowledge.

THIS is a very smartly-written essay on modern science, with a theological tendency. It exposes with keen logical force the somewhat pompous pretensions which a not inconsiderable section of our scientists have made of late years to found on the ruins of all our ancient beliefs and hopes a gospel of fatalistic materialism. Sir Edmund Beckett's treatise furnishes an admirable antidote to much of the materialistic teaching which the student of to-day must needs meet with. Science taught with the express object of inculcating materialistic notions, or at all events taught with that result, can hardly be said to have an elevating tendency. The notion of atoms as the universal divinity as a substitution for the belief "in a living God," whether reasonable or not, is surely a less sublime, a more degrading conception. And yet this notion is the practical outcome of the studies of many of our most learned professors. In commencing his argument Sir Edmund Beckett fairly claims the right of describing all such materialistic theories, and all those other theories which refer to the origin of the laws of nature as "unknowable," "unthinkable," and so on, as atheistic, in contradistinction to the theistic theory. The question he puts in very direct language is this: Whether is it the most scientific to regard all the regular, exact, and unvarying movements, character, and actions of nature as the result of chance, of the will and pleasure of the atoms of which nature is composed, or of the will of the Divine Creator and Sustainer of the universe. No one, he assumes, will adopt the theory of chance, and therefore the author says only the other alternatives are possible; and—

It is evident that every denial of one is an affirmation of the other, and that no man can rationally say that he denies a Creator, but does not profess to know what theory to substitute, and that he is not bound to find one. He has found one, because there are and can be only those two. He may

not yet have made up his mind which to prefer; but until he has he has the least of all pretences to set up for an authority; for though either theism or atheism may conceivably be true, as an abstract proposition, to believe neither of them is absolutely certain to be wrong, as certain as if he said he believed both.

We have not space to follow the author all through his argument, but the following extract gives his chief contention in a condensed form:—

Now let us see further what follows from that theory (the atheistic); and first take only a single law of nature and the most universal of them all, that is, gravity, or the tendency of every atom to approach every other with a fixed intensity at some given distance, and then increasing or decreasing as the square of the distance decreases or increases, which is called varying inversely as the square of the distance. The idea of all the atoms having spontaneously adopted this law and standard of attraction by chance, before there were any laws of nature which put an end to chance, I suppose will be universally dismissed as nonsense not worth spending another word on. The only alternative is that every atom, being self-existent, had the power to adopt what laws of motion it pleased, and that they all, by some mysterious universal suffrage, conveyed through the infinity of space, or through the immeasurable sphere of the primeval nebula, agreed on that law and intensity of gravity, and have steadily kept to their agreement ever since. If such a proposition looks absurd it is not my fault. I defy anybody to translate the doctrine of inherent forces into any other plain and simple meaning, though it is easy enough for clever men to translate it into other forms of unintelligible or evasive and rhetorical language: which is not philosophy but mere verbal conjuring. I suppose, indeed, that this is only what is meant by "Pantheism," or "every atom its own god," which is logically or scientifically conceivable and is the true antithesis to Theism, and what Atheism and Materialism must really mean in the minds of those who remember that every effect must have a cause. Pure atheism is the doctrine of effects without causes. But it is of no practical importance what these doctrines are called: the question now is what the only conceivable ones are when expressed in plain English.

The evolution theory is subsequently discussed with much acuteness. We can only hope that the little book will be largely read.

*Commercial Organic Analysis.**

If it ever fell to our lot to assume the rôle of apologists for the Adulteration Act, a prominent feature in our defence of that measure would be that it has given birth to a new and valuable literature. Previous to 1872 the history of chemistry as applied to the detection of adulteration was comprised within a very narrow compass. Here and there a chemist who had been led, probably more by accident than design, to take up the subject, might be found descanting upon the sophistication of various products; but these spasmodic contributions consisted often, in no small degree, of unsupported and, not unfrequently, contradictory statements, whose chief value seemed to be the gratuitous advertisement which they secured for their author. But within the short space of seven years quite a new generation has sprung into existence in the domain of chemistry. A well drilled and trained corps of analysts has come into the field, to supplant the straggling forces who waged war with adulteration in wild guerilla fashion. The result of all this has been, that the well-worn statements of obsolete treatises have been critically sifted, impurities and admixtures in articles of every-day use, which had hitherto enjoyed quiet seclusion, have been brought to light; some approach to uniformity of opinion has been arrived at, and last, but by no means least, commercial analysis is steadily forming for itself, out of the chaos of material with which it has had to deal, a literature both orderly and concise. The work now under notice is an example. Although not exclusively devoted to the subject of adulteration, in its popular sense, we may safely venture to assert that had it not been for the Adulteration Act Mr. Allen's book would never have been written. The admixture of glucose with glycerine, for instance, or the immoderate dilution of gin with a more innocent liquid, would be matters of very limited interest, were such practices not contrary to law, and therefore liable to be made the subject of a criminal prosecution. With much truth, and in phraseology which, if not classic, is certainly forcible, Mr. Allen remarks in his preface, that "it is a lamentable fact, that while our young chemists are taught to execute ultimate organic

analyses, and to ring the changes on the everlasting chloro-, bromo-, and nitro-derivatives of bodies of the aromatic series, the course of instruction in many of our leading laboratories does not include even qualitative tests for such every-day substances as alcohol, chloroform, glycerine, carbonic acid, and quinine."

We cannot congratulate Mr. Allen upon a very close correspondence between the title of his book and its subject matter. It is not so much that the former is misleading, as that the latter is, in some respects, ill chosen. We should not be unreasonable in presuming that the object of a work on commercial organic analysis would be to treat chiefly, if not exclusively, of those compounds of organic origin which are well known as commercial articles. The number of these is so large, and the processes involved in their examination so numerous and complex, that we are somewhat astonished that the author should ever have entertained the hope, to which he refers in his preface, of exhausting the subject in one volume. As it is, a not inconsiderable portion of space is taken up with the description of compounds, which ought not, we think, to have been allowed to usurp the place of more pressing claims. Many of the substances described are fully treated in the usual works on inorganic chemistry. As instances we may mention the metallic cyanides, ferro-cyanides, and salts of ammonium and potassium. We likewise venture to think that it is not often that the commercial analyst is called upon to assay such substances as xanthate of potassium, pelargonate of ethyl, or trichloro-acetic acid. On the other hand, he would be thankful for a description of trustworthy processes for the analysis of anthracene, sugar, the starches, and other commercial organic compounds, properly belonging to one or more of the sections of this volume, but which are nevertheless conspicuous by their absence.

Mr. Allen has pursued a wise course in cutting down the inevitable "introduction" to his work to very small proportions. Something less than 20 pages of the book before us, suffice to give a brief but succinct account of general physical properties, and an outline of the methods to be pursued in the preliminary examination of substances of unknown composition.

Cyanogen being taken as the type of organic radicals, the compounds into which this substance enters constitute the first division of Mr. Allen's book. The next section is devoted to the alcohols, and contains much valuable information relating to the analysis of wines, spirits, liqueurs, and malt liquors; processes for the valuation of the Pharmacopœia tinctures and of glycerine are also described. The neutral derivatives of the alcohols form the next class, embodying the rarer compound ethers, together with chloral and chloroform. Then follows the largest and probably most important sub-division, viz., that of the acid derivatives of the alcohols, and the vegetable acids. Amongst these are included acetic acid and its homologues, lactic, oxalic, succinic, and malic acids; argol, lees, tartar, and the numerous products extracted from those materials. The chemistry of citric acid and of the lime, lemon, and bergamot juices (for most of the information regarding which Mr. Allen expresses his indebtedness to the well-known and able paper of Mr. Warrington), is described at length, as is also that of the tannins and tannin-yielding materials.

Next in order is placed the family of phenols, embracing carbolic and cresylic acids, and creasote. For the majority of the analytical processes here given we are indebted to the author's own researches. The concluding chapter treats of the acid derivatives of the phenols, including such important substances as salicylic, benzoic, and picric acids.

The defects in the work are neither very numerous nor grave. Prominent amongst them must be noted the uniform neglect of the author to explain his references. Again and again do we find authorities quoted, and somebody's special process described, without so much as a hint to indicate the direction in which we are to look for the original papers.

In referring to the toxicological detection of hydrocyanic acid in the body after death, Mr. Allen informs us that one of the causes of its disappearance is its reaction with the sulphide of ammonium produced by putrefaction, whereby sulphocyanides are formed. He then proceeds to describe a process for the recognition of these salts, from the presence of which the operator is to infer that prussic acid was the cause of death. Inasmuch as the sulphocyanides are

* "An Introduction to the Practice of Commercial Organic Analysis," by Alfred H. Allen, F.C.S. Vol. I. London: J. & A. Churchill. 1879.

amongst the normal constituents of various secretions, and that their ally and other compounds play an important part in the composition of mustard and other condiments, we cannot help thinking that if post-mortem examinations were the rule rather than the exception, hydrocyanic acid would have to be credited with a much larger number of deaths than are at present referred to its agency. If Mr. Allen's deductions were to be allowed, we should expect that many a human subject would be pronounced to have suffered death by poison, whose system was guiltless of anything more potent than the pungent condiment so long associated with beef-steak. Mr. Allen would, in fact, find himself in the position of the clinical student who too rashly concluded that his patient had eaten a horse, for the reason that beneath his bed he spied a saddle and a bridle.

The chemistry of both the black and white mustard seed is already sufficiently confused without the introduction of such a constituent as sinalbin (page 57), which is the name given by Mr. Allen to a substance long known as sulphocyanide of sinapin. We find a difficulty in reconciling the assertion on page 56, that "no volatile oil can be obtained from the white mustard seed," with the statement on the next page following that "acrinyl thiocyanate is the acrid volatile oil of white mustard."

The chief pharmaceutical compounds which are treated of are salicylic and benzoic acids, citrate of iron and ammonia, citrate of iron and bismuth, chloroform, ether, and the various tinctures and alcoholic solutions of the Pharmacopoeia, prussic acid and glycerine. The author is evidently inspired with a passion for colorimetric tests; these are introduced wherever possible. In many cases, and as rough means, we fully admit the value of this ingenious method; but we must demur to such an attempt as that described on page 115, of valuing compound tincture of camphor, as far as regards the opium present, by the depth of colour produced on adding ferric chloride. A sample of this preparation innocent of morphia, but strong in meconic acid, would by this mode of testing acquit itself far more creditably than a really genuine specimen.

We endorse the charges which Mr. Allen brings against the spirit of nitrous ether of pharmacy, although he might have called it by a better name than spiritus ætheris nitrosi, B.P.

The work is well arranged and produced, the style is admirably clear, and, whether alone or in connection with another volume yet to appear as promised, it will form a valuable contribution to modern practical chemistry.

Proceedings of the American Pharmaceutical Association at the Twenty-sixth Annual Meeting.

THE "American Year-book of Pharmacy," which has only lately reached us, grows year by year, and this most recent volume contains exactly 1,000 pages. The increase is due chiefly to an extension of the Report on the Progress of Pharmacy, which the editor, Mr. C. Lewis Diehl, of Louisville, attributes partly to his greater leisure "provided by the general depression of business." It would be well if we could all decide that dull times are the period for the perfection of our methods of work. Mr. Diehl first gives a careful summary of the most important features of pharmaceutical progress, and then fills 600 pages with abstracts from pharmaceutical literature for the year ending July, 1878. These are selected from an extensive field, and with the best judgment, and their classification is worthy of all praise.

The Reports of Committees are always an interesting feature of the "American Year-book," and this year they well maintain their character. There are reports on the drug market, on legislation, on the exhibition of specimens, and an important one exhibiting a large amount of work, shared in by quite a number of the prominent American pharmacists, on the revision of the Pharmacopoeia. The rest of the volume contains the papers and discussions reported from the last meeting of the Association, at Atlanta. The editing of this department is certainly open to one improvement, if the convenience of the reader is worthy of consideration. We can see no possible reason why the papers read should be in one part of the book and the discussions on them elsewhere. The report of the discussions seems to admirably

preserve the style of the various speakers, but they are so concise as to force the conclusion that they must have been largely trimmed. If American speakers at home are really so concise as this report shows them to be, their model might be studied to advantage in this country. The volume contains a steel portrait of Ferris Bringham, of Wilmington, Delaware, who died some eight or nine years ago. We notice that only 60 members attended the Association meeting at Atlanta last year. The next assembly will occur at Indianapolis, commencing on September 19.

An Introduction to the Elements of Pharmacy. A Guide to the Principal Points in Materia Medica, Botany, Chemistry, Pharmacy, Prescriptions, and Dispensing. By F. Harwood Lescher, Pereira Medallist. Sixth edition. (London: J. & A. Churchill.)

MR. LESCHER'S "Elements of Pharmacy" seems to have attained a fair degree of success, six editions having been published in ten years. The present edition does not seem to differ in any material point from its predecessor, which we noticed some two or three years ago. The painful labour involved in an examination of this work, with a large proportion of its pages printed laterally, compels us again to protest against such an inconvenient and unnecessary system. The work aims at giving in a condensed form a general outline of the subjects embraced in the course of study which a pharmaceutical student must go through. The section on materia medica is treated most fully and satisfactorily; with the aid of specimens at hand, this classification affords a good means of study. Botany is treated with perhaps sufficient comprehensiveness, considering the scope of the work. Chemistry is most meagrely dealt with, and should certainly be re-written for a future edition. As an instance of the process of condensation which has been adopted, we find that it has been thought advisable to give a table of the "principal" elements only. Thirty-nine only are thus honoured. The brief allusions to such subjects as quantivalence, types, &c., would be incomprehensible to one who had not studied the subject elsewhere: while the author's views of vital force are, to say the least, not so axiomatic as he makes them appear. From the sections of Pharmacy, Prescriptions, and Practical Dispensing much useful information may be gathered, and, where the author fails to teach, his book at least shows the direction in which the aspirant's studies should be directed.

MEDICAL LITERATURE.—Messrs. Churchill exhibited, at the Cork meeting of the British Medical Association, 86 new books and new editions published by them since the previous annual meeting of the Association. Half-a-dozen other medical publishers were also represented.

Medical Gleanings.

THE MEDICAL BILLS.—The Select Committee of the House of Commons to which the Medical Act Amendment Bill was referred has taken the evidence of Drs. Acland, Quain, Waters, Haughton, and Andrew Wood, Professor Turner, Sir James Paget, Sir Dominic Corrigan, Mr. Simon, and Mr. Ernest Hart, and, finding it inconvenient to complete the investigation this Session, has decided to report the evidence thus taken to the House, and suggest its own re-appointment for next Session.

HOW THEY LOVE EACH OTHER.—It can hardly be from a sense of due proportion or of editorial courtesy, says the *Medical Times and Gazette*, that the *Lancet*, after giving the evidence of a member of its own staff and of other witnesses at very considerable length, published last week what purported to be a version of the evidence of the Editor of the *British Medical Journal*—evidence which occupied five hours, and was at least very full of matter—in a condensed paragraph of half a column. Such a display of feeling does not tend to increase the usefulness or raise the character of any journal, and deserves to be noticed in the interests of journalistic courtesy and propriety.

THE SHEPPERLEY CASE.—The President of the Nottingham Medical Defence Association appealed to the medical profession for contributions to help in the payment of the expenses incurred in the Shepperley case. He explains that they had intended to have brought better evidence than that of Death, and he quotes from this journal an admission that Baron Pollock's summing up was legally favourable to the prosecution. The total costs, he says, which have fallen on the Association, amounted to nearly 500*l.*, of which about 150*l.* remain to be paid.

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REMEDY FOR WHOOPING-COUGH.—Dr. Dellenbaugh, of Philadelphia (says the *Med. Centr. Zeitung*), has had great success with the following remedy:—

| | | | | |
|---------------------|----|----|----|-----------|
| Picrate of ammonium | .. | .. | .. | 1 grain |
| Muriate of ammonium | .. | .. | .. | 20 grains |
| Licorice powder | .. | .. | .. | 50 grains |
| Water | .. | .. | .. | 3 fl. oz. |

A teaspoonful every hour for children of a year old, two teaspoonfuls from one to five years old.

**

SETTING THE MAD TO CURE THE MAD.—At an asylum in Vienna (says the *Union Médicale*, quoting from the *Danube*), a novel method of treatment has been adopted. The director has established a lithographed journal for circulation in the asylum, and he induces the patients to contribute to it. Especially he encourages them to refute the manias of their comrades. The man who believes his nose to be made of sugar candy, and liable to dissolve, he says, can argue with excellent logic against the folly of his friend's theory that his beard is a tender plant and needs frequent watering. As a rule they are able to discuss with good sense all subjects except those which concern their peculiar delusion.

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DIARRHŒA.—From a table recently published in the *British Medical Journal* it would seem that this remarkably cold summer is not quite an unmixed evil, though druggists and doctors may not perfectly appreciate the compensatory blessing. The mean temperature of the first three weeks of July was this year 56·3; of the corresponding weeks of last year 64·2. The rainfall of those three weeks this year was much higher, while in the same period 91 hours of sunshine were registered against 129 in 1878. In those three weeks of last year 1,501 deaths from diarrhœa were recorded in London and 20 other large towns. In those three weeks of this year, and in the same places, the mortality from the same cause only reached 205.

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HOW TO STOP A COLD.—Dr. Dobell gives the following plan for stopping a cold. If employed sufficiently early it is said to be almost infallible:—1. Give 5 grains of sesquicarb. of ammonia and 5 minims of liquor morphie in an ounce of almond emulsion every three hours. 2. At night give 5 jss. of liq. ammon. acetatis in a tumbler of cold water, after the patient has got into bed and been covered with several extra blankets. Cold water should be drunk freely during the night should the patient be thirsty. 3. In the morning the extra blankets should be removed so as to allow the skin to cool down before getting up. 4. Let him get up as usual and take his usual diet, but continue the ammonia and morphia mixture every four hours. 5. At bed-time the second night give a compound colocynth pill. No more than twelve doses of the mixture from the first to the last need be taken as a rule; but should the catarrh seem disposed to come back after leaving off the medicine for a day, another six doses may be taken and another pill. During the treatment the patient should live a little better than usual, and on leaving it off should take an extra glass of wine for a day or two.—*Medical Press and Circular*.

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MORAL DIETETICS.—Dr. Bock, of Leipsic, writes as follows on the moral effect of different articles of food and drink:—"The nervousness and peevishness of our times are chiefly attributable to tea and coffee; the digestive organs of confirmed coffee-drinkers are in a state of chronic derangement, which reacts on the brain, producing fretful and achrymose moods. Fine ladies addicted to strong coffee have a characteristic temper, which I might describe as a mania

for acting the persecuted saint. Chocolate is neutral in its psychic effects, and is really the most harmless of our fashionable drinks. The snappish petulant humour of the Chinese can certainly be ascribed to their immoderate fondness for tea. Beer is brutalising, wine impassions, whiskey infuriates, but eventually unmanus. Alcoholic drinks combined with a flesh and fat diet totally subjugate the moral man, unless their influence be counteracted by violent exercise. But with sedentary habits they produce those unhappy flesh sponges which may be studied in metropolitan bachelor-halls, but better yet in wealthy convents. The soul that may still linger in a fat Austrian abbot is functional to his body only as salt is to pork—in preventing imminent putrefaction."

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THE GENERAL MEDICAL COUNCIL.—On July 22 Mr. Ernest Hart, the editor of the *British Medical Journal*, was examined before the Select Committee on the Medical Act Amendment Bill. The following extract contains a pointed exposition of the work of the General Medical Council:—All that the Council had done for the profession had been to make a Register, which cost nothing or next to nothing, as it was sold presumably at a price to cover its cost; and to publish a Pharmacopœia, which equally cost nothing, because it was avowedly sold at a price to cover its cost; and even these were not the work of the Council, but of paid officers. The income of the Council has been expended entirely upon house-rent and clerks' fees, and fees paid to themselves. Their present income was 4,000*l.* a year. Out of that, they spent 2,000*l.* on a place to sit in, and 2,000*l.* on themselves for sitting there; in fact, they virtually sat there till they had talked all the money out of the bank into their own pockets, and then they dispersed. It was remarkable with what accuracy they performed that duty; and, as one of their own officers had reported, it was impossible to estimate how long they were going to sit, except by reference to the cash in the bank. The Register was made by a clerk, and the Pharmacopœia by a committee, who were paid over 2,000*l.* for making it. Putting aside those duties, which he did not admit were the duties of the Council, they had only two other duties—one of which was preventing the admission to the profession of unqualified men, and attending to prosecutions; and the other was the visitation of examinations. And whenever a difficulty arose in relation to either of the latter, the invariable answer had been that the funds of the Council were inadequate.

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DEPILATORIES.—W. Cairns Wick, in the *British Medical Journal*, quotes the following treatment of hirsuties from a small work on "Diseases of the Hair," by Benjamin Godfrey, M.D.:—"The cause of this condition must be first found out, and, if possible, removed. Should it be the general hirsuties we have to do with, then a regular medical treatment will be necessary. Steel stands pre-eminent as a remedy given for six months at least; the constipation produced thereby to be obviated by a compound rhubarb pill once or twice a week. Tepid baths to be used frequently, and the hairy surface to be rubbed gently twice a week with solution of potash (liq. potass.) diluted with spirits of wine, equal parts. The following morning, a tepid bath and profusion of soap, well lathered, but not rubbed hard enough to give pain. The potash solution should be laid on with a piece of lint tied to a tooth-brush handle or a piece of stick, and lightly laid upon the comate material. If nicely used, no damage will be done to the skin, the solution dissolving the cuticle and hair, and a leaving a fair, white, smooth surface behind. Hairs should never be plucked out, and the usual depilatories are worse than useless. Hair is quite soluble in solution of potash; sulphuric acid also dissolves it, but requires some time to do so. Local maternal marks or moles can be easily removed by applying the acid nitrate of mercury, and letting it remain upon the diseased patch till it dries. My plan is to take a fine-pointed glass tube and, having dipped it in the caustic solution, to dot all round the hirsute mass upon the healthy skin where they both join; then to dot points through the mass, like the white squares upon a chess-board, leaving the blank ones to be treated in a similar manner in a fortnight hence. By such a method, you prevent too great an inflammatory action setting in, and make a less scar in the future."

THE BARK CURE.—Dr. Norman Kerr, writing in the *Medical Temperance Journal*, reduces the pretensions of the *Cinchona rubra* to very moderate dimensions. It possesses no magical virtues, but he admits that it is a valuable adjuvant to other remedies in the treatment of dipsomania. He thinks it of great service in restoring the broken tone and power of the shattered mental and physical constitution of the hapless dipsomaniac. We must look mainly, however, to the will, however weakened, of the inebriate for an effectual and a lasting cure. "To whatever of will may be left to him—and very often, alas! there seems none at all remaining—we must look for true reformation and a permanent cure. If all moral power have vanished, and every spark of mental energy fled, the only thing left is to forcibly keep the miserable wretch of humanity where no alcohol is . . . but no charmed potion will ever slay the dragon of dipsomania." Dr. Kerr gives several formulae for making preparations of red cinchona, among which he recommends a decoction prepared as follows:—Add 1 oz. of the powdered bark to 1 pint of water, acidulated with 100 minims of dilute hydrochloric acid. Boil for ten minutes, and strain when cold. Pour water over the contents of the strainer till the product measures 1 pint. Of this give 2 oz., or a wineglassful, every three hours, gradually diminishing the frequency and quantity of the dose after the first day, till in six or seven days it is reduced to a teaspoonful three times daily. The bark may sometimes be advantageously administered with other drugs. Mr. Moseley has been able to subdue the craving for alcohol by prescribing a non-spirituous combination of red bark, chiretta, and a hot general stimulant. But the most reliable temporary alleviation of this craving that Dr. Kerr has ever witnessed has followed the use of a full emetic dose of ipecacuanha. He also speaks favourably of the Turkish bath in these cases, as it, he says, tends to soothe the inordinately-excited brain and nerve centres, and to induce sleep more refreshing and infinitely less dangerous than the sleep produced by chloral or opium, while it strengthens the body, calms the perturbation of the mind, and reawakens the appetite for food.



BROWN WINDSOR SOAP.

At the vacation sittings of the High Court of Justice, before Mr. Justice Stephen on August 13, a motion for an injunction was made on behalf of Messrs. Benbow & Co., wholesale perfumers, carrying on business at 12 Little Britain, to restrain the defendants, Messrs. Low, Son, & Haydon, also wholesale perfumers, carrying on business at 330 Strand, from stating or representing that the highly-perfumed brown Windsor soap manufactured by the plaintiffs, and the wrapper used by them, were imitations of the defendants' soap and an infringement of their trade-mark. The parties had been in partnership till 1862, when the firm was dissolved and they then carried on separate businesses, and both sold "highly-perfumed brown Windsor soap," using nearly identical wrappers. The plaintiffs' soap has had a large sale in America, and the defendants recently gave notice to the plaintiffs' consignees in America that the soap was a counterfeit of theirs and the labels an infringement of their trade-mark, and in consequence a large quantity of soap was returned to the plaintiffs.

Mr. Willis Bund now moved for an injunction restraining the defendants from circulating such statements, as they tended to destroy and damage the plaintiffs' trade in America, and urged that he was entitled to an injunction pending the decision as to the persons entitled to the mark, on the ground that the Court always protects property pending litigation.

From the defendants' affidavits it appeared that they had instituted proceedings in America against the plaintiffs' consignees in infringing their trade-mark, and that an *interim* injunction in such suit had been made in America. It was in the course of these proceedings that letters by the defendants' solicitors were written to the plaintiffs' consignees. The plaintiffs have applied to register their labels as a trade-mark, but this is opposed by the defendants.

Mr. Byrne opposed the motion on behalf of the defendants, and contended that nothing had been done to entitle the plaintiffs to an injunction.

Mr. Justice Stephen said he must dismiss the motion with costs. The letters that had been sent were mere lawyers' letters despatched in the course of the defendants' proceedings in America. He did not think that any case had been shown for the interference of the Court.

THE SALE OF METHYLATED SPIRIT.

At the Sunderland Police Court on July 22, before Alderman Potts and Andrew Commons, Esq., J. W. Gillies, chemist, Sunderland, was charged, at the instance of the Excise Authorities, "That on May 17, 1879, at Sunderland, he not being a distiller or rectifier of spirits, or other person duly authorised or specially licensed by the Commissioners of the Inland Revenue to mix and make methylated spirits, sold a certain quantity, to wit, 1 gill, of methylated spirit without having in force a licence on that behalf, granted under the authority of the Act, contrary to the terms of the statute in that case made and provided."

Mr. W. A. Young, district supervisor of excise, conducted the prosecution, and Mr. Henry Glaisyer, of Birmingham, solicitor to the Chemists and Druggists' Trade Association of Great Britain, appeared for the defendant.

Mr. Young said the information was laid under the 5th section of the 24th and 25th Victoria 91, which enacted that every person not being a distiller or rectifier of spirits, or other person duly authorised or specially licensed by the Commissioners of Inland Revenue to mix and make methylated spirits, who shall sell any such spirits in any quantity without having in force a licence on that behalf, granted under the authority of this Act, shall forfeit the sum of 50*l.* over and above all other penalties to which he may be liable under any other Act or Acts in force. The authorities, he said, had had complaints made to them that Mr. Gillies was selling methylated spirits, and an officer of the Inland Revenue visited his shop on May 17 last. He asked for a gill of methylated spirits, with which he was supplied, Mr. Gillies stating at the time that he had no licence to sell it, and must put something in it. There was an article sold under the regulations of the Board without a licence called "Finish," which was methylated spirit to every gallon of which had been added 3 oz. of gum resin or shellac. Part of the sample purchased from Mr. Gillies was sent to the laboratory at Somerset House for analysis. It did not contain sufficient gum resin to constitute what was called "finish" by the Board's regulations.

E. Lewthwaite, an officer of Inland Revenue, stated that, acting on instructions, he visited the defendant's shop on May 17 last, and asked for a gill of methylated spirit. Mr. Gillies supplied him. He said there had been a great deal of bother about that sort of thing, and he must put a little of something in it before he could sell it, as he had no licence. Fivepence was paid for it. He took the spirit home, and kept it till he gave it to Mr. Young, the supervisor.

Cross-examined by Mr. Glaisyer: When he went into the shop he asked for a gill of methylated spirit, and the defendant replied that he had no licence to sell it, and must put something in it before he could sell it. Defendant did not say that he did not sell it. Witness did not suggest that he had it in stock. Defendant did not say that he kept it only for making his preparations. Defendant did not ask what witness wanted it for. Witness did not say his son was making experiments, and wanted it for burning. Did not say anything about burning it or making experiments. Defendant did not say he was making "finish." He said he could do something at it. Witness did not ask whether that would destroy its burning power. Did not see what he put in it. Did not see him put anything in it. Had not seen much methylated spirit. This had a yellowish tinge.

Did not see him put any resin into it. Did not shake it up. Kept it a few days and then handed it to the supervisor. It was put in witness's own bottle.

By the Bench: The defendant went into the back shop to fill the bottle, and handed it to me over the counter. He told me before going into the back shop that he would have to put this stuff into it.

William Anthony Young, supervisor, said: I received this sample of methylated spirit from Lewthwaite. It looked about the same as it does now. The bottle contained a gill. I sent about half of it to the laboratory at Somerset House for analysis. I secured the sample myself in the box (produced), addressed it, and sealed it with the Revenue seal. It was addressed, "The Principal, Laboratory, Inland Revenue, Somerset House." It was sent off on June 11. I could not be positive when Lewthwaite gave me the spirit. He got it on May 17, and it was two or three days after I packed it up and sent it to London on June 11. I shook it up when I received it from Lewthwaite, and at the time I divided it I shook it thoroughly.

Henry James Helen said: I am one of the analysts to the Board of Inland Revenue at Somerset House. I remember receiving a parcel from Sunderland on June 12. The box produced is the one in which the bottle was enclosed. The seal was perfect. I analysed it, and found it to be methylated spirit containing 429.8 grains, or rather less than 1 oz. of gum resin to the gallon. Methylated spirit to be what the Board of Inland Revenue call "finish" must have dissolved in it 3 oz. of gum resin.

By Mr. Glaisyer: There was an earlier regulation of the Board which required less. On April 23, 1837, the Board issued an order allowing it to be sold with 1 oz. of gum resin. If the resin was not thoroughly dissolved the liquid taken from the top of the bottle would contain less resin than that at the bottom.

This was all the evidence produced.

Mr. Glaisyer (addressing the Bench) said: The charge against the defendant is for selling methylated spirit without a licence. The answer I am instructed to make is that he sold the article known as "finish." If this is proved to your satisfaction the summons must be dismissed. I think I am entitled to go further and say, that in construing this very penal statute, most ample proof is required on the part of the prosecution before the defendant can be convicted, and, if there exists a doubt in your mind, the defendant is entitled to the benefit of that doubt, and the charge against him should be dismissed. There is no doubt that the sale of methylated spirit as "finish" is allowed without a licence, and there are the two general orders of the Board of Inland Revenue on that subject, which have been mentioned to you to-day. Perhaps I may be allowed, in passing, to call the attention of the Bench, in a few words, to the law which sanctions the manufacture and regulates the sale of methylated spirit. In the first place I may tell you that methylated spirit is not spirits of wine. The sale of spirits of wine has been for many years regulated by statute, and prohibited except under a wine licence. But for the purposes of art and manufacture it has become requisite that a preparation of spirits of wine should be sold much more generally than is allowed by this provision; and therefore in the year 1855 an Act was passed by which a mixture of spirits of wine with wood naphtha or methyl alcohol was permitted to be sold under another licence, and that mixture is called methylated spirit. It cannot be sold in its pure state except by persons who have taken out a licence, and the penalty for selling it without a licence is 50*l.*, the amount claimed in the present proceedings. Under an Act passed in the reign of George IV, the magistrates have power to diminish that penalty to 12*l.* 10*s.*, or one-fourth of the amount. Though they cannot make a greater reduction, they have power to recommend the Commissioners of Inland Revenue to further remit the penalty, and these recommendations, I am glad to say, receive the very careful consideration of that Board. Spirits of wine, as methylated spirits, can therefore be sold with a licence, but the use of methylated spirit as medicine or an ingredient in medicine is most strictly prohibited, and it is chiefly needed in the manufacture of furniture polish and varnish, in making various liniments, and for burning in spirit lamps. The use of methylated spirit in art and manufacture has constantly called for modifications in the restrictions in its sale, and in

consequence the general orders to which allusion has been before made have been published by the Inland Revenue Board, and the article known as "finish" is the outcome of these modifications in the law. "Finish" is made by the addition to a gallon of methylated spirit of 3 oz. of gum resin; thus, whilst preserving its utility in art and manufacture, it is rendered so nauseous and unpalatable that no one will drink it, and that is really the object with which the resin is added, for nauseous as methylated spirit is, people have been found who had such a craving for spirits that they had actually drunk it. No other alteration is allowed in the constitution of "finish" except the addition of more gum resin or a little colouring matter, and any alteration in other respects incurs a liability to a very heavy penalty—200*l.*, if I recollect correctly. The defence is that the defendant has really sold the article "finish." He would tell you, if his mouth were not closed, that when this informer came into his premises he told him he did not sell methylated spirits, and had no licence for the purpose. The informer asked if he did not keep it in stock. He said he did, and the informer said he might let him have a gill, and the defendant again replied that he could not sell him methylated spirit, but he could sell him "finish," and proposed to sell him that article, and asked him for what purpose he wanted it. The informer replied that his son was making experiments, and required it for burning, and also inquired if the "finish" which the defendant proposed to sell would burn in a lamp. The defendant said he believed it would, and on those terms he sold him the article "finish." As he measured it out he added to the half-pint of spirit at least half an ounce of gum resin, or more than was actually required by the general order. The general order authorised him to sell "finish," and he was under the impression that he had sold it. He would further tell you that he never keeps more than half a gallon of methylated spirit on his premises at one time, that quantity being quite sufficient for the requirements of his business for four months, his sole use for it being the manufacture of certain liniments. He is never asked for methylated spirit, and therefore takes out no licence for its sale. For 12 years he has been carrying on the business of a chemist and druggist in High Street, and this is the only charge that has ever been made against him. On this occasion he says he had sold "finish," and had, therefore, not infringed the law. I hope you will take that view of the case and discharge the summons.

After some unimportant remarks from Mr. Young, the Bench retired to consider the case, and on their return shortly afterwards—

The Chairman (Mr. Alderman Potts) said:—The Bench find that the law has been clearly violated, and we cannot do otherwise than convict. We impose the minimum penalty of 12*l.* 10*s.*, and recommend a reduction to 5*l.* This is the first case, so far as we know, that has arisen in this town, and the defendant, we think, may not have been aware of the order of 1867.

Mr. Young: I will forward the recommendation.

Personalities.

MR. T. O. SANDEL, the proprietor of Sandell's hair restorer, late of Yeovil, has removed to Keane Terrace, West Kensington.

MR. GEORGE SPEAR, of Portsea, has sold his business to Mr. H. P. Foster, of the same town. Mr. Spear is preparing for the medical profession.

MR. W. G. GRACE, the cricketer, has lately taken his M.D. degree at Edinburgh University. A sum of nearly 1,500*l.* was presented to him at Lord's Cricket Ground last month with the suggestion that it might serve to purchase a practice with.

MR. E. B. STORM, late of Ipswich, has taken the retail business of Mr. F. J. Clarke, of Lincoln. On leaving Ipswich Mr. Storm was presented with a handsomely-bound copy of Farrar's "Life of Christ," by one of the Wesleyan chapels where he had acted for many years as a local preacher.

THE will of Mr. William Tilbury Fox, M.D., late of 14 Harley Street, who died on the 7th ult. at Paris, was proved on the 16th ult., by Mrs. Sophia Campbell Fox, the widow and sole executrix, the personal estate in the United Kingdom being sworn under 18,000*l*. The testator leaves all his real and personal estate to his wife.—*City Press*.

THE will and codicil of Mr. Charles Heath Warner, late of 55 Fore Street, of 121 London Wall, and of 3 Higham Terrace, Islington, wholesale and retail chemist and druggist, who died on June 12, were proved on the 16th ult. by Mr. T. G. Darton and Mr. E. R. Allen, the acting executors, the personal estate being sworn under 16,000*l*. The testator bequeaths to his executors 19 guineas each; to his wife, Mrs. Mary Ann Warner, 300*l*. and all his household furniture, plate, and effects (except his pictures); and the residue of his property upon trust for his wife for life, and then for his children.—*City Press*.

Foreign Items.

POTASH IN CEYLON.—It is reported, says *The Colonies and India*, that 14 per cent. of potash can be obtained from the rocks in Ceylon, by simple disintegration.

QUININE IN AMERICA.—The bill putting quinine on the free list passed the House of Representatives by a vote of 125 to 32, and in the Senate was passed almost unanimously.

QUACKS IN GERMANY.—A travelling doctor living at Heide was charged lately at Hamburg with having sold medicines to a patient at Hamburg in contravention of the law which confines the sale of such to apothecaries only. He had charged 15*s*. for 24 powders of oxide of iron. He was fined 80 marks.

GERMAN BEER.—A brewer was fined 180 marks at Nuremberg for having added licorice to his beer. Another at Munich, for having added 20 grammes of sulphuric acid to 100 litres of white beer for the purpose of clearing it, was sentenced to 21 days' imprisonment, a judgment which was confirmed on appeal.

A DANGEROUS VICTORY.—In Germany physicians are not permitted to dispense medicines when there is an apothecary to do it for them. In Regensburg three homœopathic physicians were practising, when an apothecary came among them and notified them to send him their prescriptions. Two of them refused to obey, and were brought before the court and fined 20 marks. The case was carried to a higher court, and the medicines (pilules) were sent to the University of Erlangen for chemical analysis. The chemists reported that the pilules were made of pure sugar and did not contain any medicine; whereupon the judge reversed the decision of the lower court, and declared there was no law against physicians distributing sugar-plums as freely as they chose.

Materia Medica.

CHINESE GALLS.

A NEW kind of Chinese galls has been lately introduced. They are of the size of a plum, bent over at the point, and contain 72 per cent. of tannin.—*Arch. Pharm.*, ii., 724.

A NEW INSECT POWDER.

THE wild rosmary (*Ledum palustre*) is said to be a first-rate plant for the destruction of all kinds of annoying insects, and may be usefully employed as a substitute for pyrethrum or "Persian insect powder." It can be used dried and pulverised or fresh. The tincture readily relieves the itching from bites of gnats and mosquitoes. Glycerine added to the tincture and rubbed on the hands and skin is a protection. The plant grows wild in Europe and the northern parts of America, and may be obtained at less cost than the pyrethrum.—*Drug. Circular*.

FUCUS VESICULOSUS.

DR. CARSON, Portrush, Ireland, writes to the *British Medical Journal*:—"Anti-fat," now much advertised as a remedy for obesity, is stated to be an extract from the *Fucus vesiculosus*. Some who are paying expensively for the remedy may be surprised to hear that the *Fucus vesiculosus* is here largely used as a food for pigs, and that it in no way interferes with their growth. It will require a number of well-reported cases to convince me that what fattens a pig will make a Christian lean. I have myself visited a sty to verify the fact that it was really the *Fucus vesiculosus* which the pigs were getting."

REMARKABLE PROPERTIES OF ALGERIAN SENNA.

A DYER of Algiers, named Nony, lately discovered certain remarkable properties in Algerian senna, which he has now made known to the world. It is not precisely a discovery of any new medical property, but it appears that when this senna is boiled with water a liquid is obtained which puts out fires in the most extraordinary manner. In spite of its vegetable origin, says Mr. Nony, this liquid undergoes no fermentation on decomposition, even during the most prolonged sea voyages. It appears from a notice in a French paper that no less than 4,000 spectators assembled at Algiers to witness the remarkable fire-extinguishing experiments made by the inventor with this decoction of Algerian senna.—*Canadian Pharm. Journal*.

QUEBRACHO, A HOMŒOPATHIC REMEDY.

THE bark of another Brazilian plant, *Aspidosperma quebracho* (*Apocynaceæ*), has lately been recommended as an antipyretic. Dr. Penzoldt, of Erlangen, has recently experimented with it on men and animals, and reports his results in the *Berl. Klin. Wochensh.* He finds it to possess little or no antipyretic effect, but he observed that in rabbits and dogs motor paralysis and dyspnoea increased with the dose administered. On human subjects, in smaller doses, however, he found a reverse effect. In bronchitis, pleurisy, phthisis, &c., he finds that it reddens the blood and causes deeper breathing and general relief. He also observes that the addition of quebracho solution to blood, in the presence of oxygen, makes it assume a bright red colour, and he is inclined to think that possibly the blood is rendered capable of taking up more oxygen than usual, and carrying it to the tissues. This is, however, merely a provisional hypothesis, and at present, says the *Medical Times and Gazette*, from whence we gather these particulars, there is no satisfactory explanation of the fact that, while moderate doses of the extract alleviate dyspnoea in man, large doses cause dyspnoea in the lower animals.

Formulae.

FOR CHAPPED HANDS.

DR. M. A. WILSON states, in the *New York Medical Journal*, that he has found the following a useful mixture for chapped hands:—

| | |
|-------------------------|---------|
| Acidi carbolici | gr. xv. |
| Vitellum ovi | No. j. |
| Glycerinæ | f. 3ij. |

Smear a small portion on the hands several times daily.

CHANGEABLE TOOTH POWDER.

| | |
|------------------------------------|------------|
| Cochineal | 15 grains |
| Alum | ½ drachm |
| Rub to a fine powder, and mix with | |
| Powdered orris-root | 1 oz. |
| Cream of tartar | 10 drachms |
| Carbonate of magnesia | 1½ drachm |
| Cuttle-fish bone | 5 drachms |
| Oil of rose | 5 drops |

Mix.

This gives a white powder, which turns red on being wetted.—*American Druggists' Circular*.

CAMPHOR BALLS.

CLARIFY 1 lb. of mutton suet, and add to it 3 lbs. of spermaceti, 2 lbs. of white wax, and 1 lb. of gum camphor cut into very small pieces. Melt these together with gentle heat and stir until the camphor is dissolved; then pour it into moulds. Frequent application of this emollient will prevent disagreeable roughness of the hands. Should they become chapped, a most effectual but inconvenient way of healing them is to wrap them in wet cloths with an outside bandage of flannel, first making a free application of the camphor balls. This treatment will soften and whiten the roughest skin, and it is also an excellent application in chronic rheumatism.

LONDON CHLORODYNE.

PROFESSOR STARLING LOVING, M.D., of Columbus, Ohio, sends us the following, with the remark that he has every reason to believe that it gives the correct composition of a famous nostrum:—

| | |
|-----------------------------------|------------------|
| Sulphate of morphine | 16 grains |
| Extract of cannabis indica | 32 grains |
| Chloroform | 2½ fluid drachms |
| Oil of peppermint | 48 drops |
| Oil of capsicum (capsicin?) | 16 drops |
| Simple syrup, to make | 8 fluid ounces |

Mix.—Bottle to be shaken occasionally

Detroit Lancet.

Clippings and Pickings.

THE MIDDLESEX HOSPITAL uses 400 oz. of quinine annually.

WHICH IS MASTER?—Some German apothecaries now find it necessary to add to their advertisements for assistants a reference to the one just leaving them.

MRS. PARTINGTON has been reading the Registrar-General's reports, and thinks "total" must be an awful malignant disease, since as many die of it as all the rest put together.

IRIDESCENT GLASS is made by exposing glass, at a high temperature, to the fumes of stannic chloride, to which barium or strontium nitrate is added when deep colours are desired.

MEDICAL CLASSIFICATION.—The *Detroit Lancet* spitefully reports that, "At its regular and homœopathic departments, Michigan University graduated seventy-six medical students, June 24—men, women, and homœopaths."

SCIENTIFIC EDUCATION.—Jack (aged ten years or under) —"I trust, Tommy, that you believe in the non-essentiality of a pre-existing first cause." Tommy: "Oh, certainly. At least I go no further back than the primordial atomic globule." Exeunt, driving their hoops.—*Punch*.

LIQUID GLUE can be made easily by diluting official phosphoric acid with two parts, by weight, of water, and saturating with carbonate of ammonia; dilute the resulting liquid, which must be still somewhat acid, with another part of distilled water, warm it on a water bath, and dissolve in it enough good glue to form a thick syrupy liquid. It must be kept in well-closed bottles.

PETROLEUM.—Wearied with their efforts to work up the price of petroleum again by the limitation of production, a meeting of despairing producers at Bradford, Pennsylvania, passed the following resolution last month:—

WHEREAS, The shortest way to \$2 oil is through 25 cent oil, therefore Resolved, That we favour the pushing of the drill as rapidly and diligently as possible, until the goal of 25 cent oil is reached.

MR. J. M. NIXON, writing to the *Guardian*, suggests that the enormous quantities of water produced by the combustion of coal and other inflammable substances may have had something to do with the abnormal supply of rain. Why it should come this year he does not explain. Mr. Nixon asks whether, as carbonic acid has a "soothing and beneficial effect when diluted, as in effervescing drinks," it may not also have conducted to human longevity.

MILK LEMONADE.—Loaf sugar, one and a half pounds, dissolved in a quart of boiling water, with half a pint of lemon juice, and a pint and a half of milk; this makes a capital summer beverage. A half pint of sherry added is a great improvement.—*Caterer*.

AMMONIA BATH.—A correspondent of the *Scientific American*, residing at Honolulu, Sandwich Islands, says that a good health preservative, especially in summer, is to sponge the body with cold water, containing a small percentage of some alkali, such as ammonia. The ammonia combines with the oil or grease thrown out by the perspiration, forming a soap, which is easily removed from the skin, leaving the pores open, thus promoting health and comfort.

GLYCERINE.—Europe produces annually about 7,600 tons of glycerine, thus divided:—France, 3,000 tons; Austria, 1,000 tons; Russia, 1,000 tons; Holland and Belgium, 750 tons; Germany, 750 tons; England, 500 tons; Italy, 250 tons; Spain, 250 tons; Sweden and Norway, 100 tons. Germany refines nearly half of the entire European production.—*Chemiker Zeitung*. As soon as a Frenchman reads this paragraph he will proceed to prove that the glycerine production of a nation is the index of its civilisation.

HORSE TAMING.—A. E. B., in the *English Mechanic*, says the following receipt will quiet any colt, however vicious he may be:—"Get 1s. worth of each. Oils of laudanum, rhodium, marjoram, dragon, scate (*sic*), cedar, and kipney (*sic*), mixed together about half an hour before shoeing him. Wet a rag with it and tie round his bit; it will make the horse docile, and be quite manageable. In extreme cases a small thimbleful poured in the ear will effect the desired end at once. I have used the above for years and never once had any trouble; it is quite harmless to the animal." Perhaps some kind reader will supply the commentary necessary to make it intelligible to the ordinary druggist.

THE COST OF THE ELECTRIC LIGHT.—Some idea of the cost of the electric light for street illumination may be gathered from the proceedings of the Metropolitan Board of Works last week. The General Purposes Committee reported that the cost of lighting the Thames Embankment was at first 6d. per light per hour, but the French Society of Electricity, who have been doing the work, are now willing to reduce the price to 3d. per hour, and they recommended that the offer be accepted for a period of six months, and that the use of the light be extended to Northumberland Avenue. The reduced rate is still higher than an equal amount of gas-light would cost.

LIME-JUICE CORDIAL.—The following receipt is given in an American journal:—Take of glucose, 36 lbs.; cane sugar, 108 lbs.; lime juice, 14 gallons; spring water, 23 gallons; essential oil of orange, ½ fluid oz.; essential oil of nutmeg, ½ fluid oz.; salicylic acid, 2 oz. Place the glucose and cane sugar in copper pans, with a sufficient quantity of water, and dissolve with the aid of a moderate heat. To the syrup thus prepared the essential oils are added, and thoroughly incorporated. The salicylic acid is next incorporated with the syrup, and the whole combined with the lime juice and water. Agitate occasionally for 24 hours, and strain through fine muslin. The product should measure 54 gallons, or 1 hogshead.

MARTINDALE'S NITRO-GLYCERINE TABLETS.—Is the editor of the *British Medical Journal* a Scotchman? He found this paragraph in the *Daily News*, and laid it before a member of the medical profession who has paid much attention to the subject. The *Daily News* observes:—"They (the tablets) are reported upon very favourably from a medical point of view, but we may perhaps be excused if we point out that there are other very serious considerations involved. Has the ingenious chemist whose discovery is here recorded so completely confined his reading to professional journals that he never heard of the Explosives Act, which provides, *inter alia*, that before an apothecary's shop may be converted into a nitro-glycerine factory the consent of the local authorities and the approval of the Secretary of State must be obtained? Have the plans of the proposed factory and of the adjacent buildings where the explosive pills are to be made been deposited at the Home Office in triplicate, as the Act enjoins? Will the pill-boxes be water-proof, and will they, in accordance with the orders of the Secretary of State, be marked 'Explosive:—Blasting cart-

ridges, containing dynamite ammunition. Class 6, division 2? Moreover, it is not quite clear that, in his devotion to science, the chemist in question has not overlooked patent rights. The House of Lords have just decided on an appeal case that to absorb nitro-glycerine in porous non-explosive substances constitutes an infringement of Nobel's patent. It might be a nice question for a court of law how far an angina pectoris patient, taking one of these pills, might not be held to be disobeying an injunction of the highest court of appeal. These considerations are urged on purely legal grounds. But the prospect of a growing passion for nitro-glycerine pills opens up apprehensions of personal surprises of a very unpleasant kind. We have already sufficient 'mysterious disappearances' without introducing a fresh element of possibility in the shape of nitro-glycerine to be taken internally. The apothecary who made pills to prevent earthquakes is an old figure in literature. An apothecary who makes pills calculated to bring about an earthquake is a new factor in social life which appears to require special attention." The member of the medical profession who has paid much attention to the subject writes as follows:—"I have read with some amusement, not unmixed with astonishment, the extract from the *Daily News*. Surely the writer must be joking—it cannot be meant seriously. The dose we employ in medicine could not, by any possibility, cause an explosion. Long ago, when first I commenced working with the drug, I took steps to assure myself that I was not subjecting my neighbours to any danger, and I am thoroughly satisfied as to the safety of Mr. Martindale's preparations. However, to make assurance doubly sure, I have to-day made some observations which I trust will satisfy even the most sceptical. I obtained about an ounce of the mass from which the pills and lozenges are made, and carried it with me in my coat-pocket, first to Westminster in an omnibus, and then to the city by underground railway. It received a very considerable amount of jolting and knocking about, and, had it been an explosive, could hardly have failed to have gone off and annihilated me. This evening, I stirred it up, first with a lighted match, and then with a red-hot wire. I have also thrown some of the pills and lozenges from a second-floor window to the pavement beneath without the slightest effect. That the mass cannot be exploded by percussion is, I venture to think, amply shown by an observation also made this morning. A portion of the mass was placed on an iron plate, and a heavy weight allowed to fall on it from a considerable height. Another portion was wrapped in paper, and hammered for some minutes on an anvil. If that will not satisfy them, what will? We have not been unmindful of the requirements of the Explosives Act, and, to the best of my belief, no patent rights have been infringed. Nitro-glycerine is a valuable remedy for a most painful and distressing complaint, and it would be a thousand pities if any attempts were made to limit its utility. It can be used for medicinal purposes with the most perfect and absolute safety."

Obituary.

BRITTEN.—On July 6, 1879, Thomas Britten, chemist and druggist, Berkdale, late of Liverpool. Aged 56.

GLENCROSS.—On July 8, 1879, Mr. William Glencross, chemist and druggist, Kidwelly, Carmarthenshire. Aged 47 years.

GRIFFITHS.—On July 10, 1879, Mr. William Griffiths chemist and druggist, Aberayron. Aged 52.

MASSON.—On June 4, 1879, Mr. George Masson, pharmaceutical chemist, Grenada House, Torquay. Aged 30 years.

MORTIMER.—On July 16, at his residence, Ash Grove, Haekney, suddenly, of heart disease, Mr. James Mortimer, aged 61, brother-in-law and for many years the faithful manager for W. J. Bush & Co., Artillery Lane, Bishopsgate Street.

POWELL.—On July 14, 1879, Mr. William Powell, chemist and druggist, Bridgend, Glamorganshire. Aged 40 years.

WHITTON.—On July 17, at 7 Poultry, after an illness of eight weeks, Mr. Joseph Whitton, for many years the valued and trusted manager of the Poultry branch of Messrs. Corbyn, Stacey & Co.'s business. Aged 52.

PAINFUL SUICIDE OF A DRUGGIST.—On August 9, Mr. Humphreys, the Coroner for Eastern Middlesex, held an inquiry at the Town Hall, Shoreditch, touching the death of Mr. Benjamin Thorpe, aged 33, of 301 Old Street, E.C., of the firm of Blackman & Hicks, of that address. About noon on Thursday last, it seems, the deceased left the dispensary in charge of a lad named Ellis, and went into an outhouse in the back premises, as he said, to have a cigar. Some considerable time elapsed, and, as he did not return, the lad Ellis went in search of him, and found the outhouse door fastened on the inside. At one o'clock Mr. Bond, a lodger in the house, came home, and on the lad representing to him the state of affairs, he burst open the shed-door, and the deceased was found lying on a bench quite dead and rigid. A strong odour of almonds was in the air, and Dr. Burchell, who was called in, pronounced death to have been caused by prussic acid, and a post-mortem examination made on Friday proved that gentleman's assumption to be correct. On search being made, a bottle which had contained the poison, to which from his position the deceased had easy access, was discovered in the outhouse. The brother of the deceased stated that he had been in a desponding state for many weeks; but this did not appear to be borne out by the other evidence. After a slight deliberation a verdict of "Suicide whilst of unsound mind" was recorded. A melancholy feature in the case is the fact that the deceased was to have been married in a few days, and on the day of his death was to have accompanied his future wife to Madame Tussaud's Exhibition in Baker Street, and indeed shortly after the unhappy man was found as described the young lady came to Old Street for that purpose. He was in very easy circumstances, and much liked in the neighbourhood. There is nothing to account for the act.

Trade Notes.

THE wholesale drug and drysalter business of Messrs. J. W. Hunter & Co., of Stockton-on-Tees, was registered as a limited liability company on June 26, with a capital of 5,000*l.* in 5*l.* shares.

WE HAVE received a sample of Osborne's golden drops for deafness, from Mr. E. M. Osborne, Thaives Inn, and also of Lindley's gout and rheumatic pills from Mr. H. Lindley, of Sheffield. Both are highly recommended by accompanying testimonials, but we have had no present opportunity of trying either.

TAUNUS WATER COMPANY.—Upon terms of an agreement this company proposes to purchase and work the spring of mineral water situated in the Taunus Mountains, near Frankfurt, Germany, together with the goodwill therein, and all rights pertaining thereto, belonging to Mr. J. Frederick, the proprietor. The company was incorporated on June 21, with a capital of 35,000*l.* in 1*l.* shares, and will carry on the business of mineral water manufacturers, bottlers, and exporters. The subscribers are:—

| | Shares |
|---|--------|
| Thomas V. Turner, 44 Bingleworth Road, Brixton, wine merchant | 1 |
| Edward Robert Walpole, 15 Blythwood Road, Crouch Hill, wine merchant | 1 |
| Frederick Sperling, 110 Grosvenor Road, South Norwood, secretary to a company | 1 |
| Alexander Grace, 12 Walbrook, mortgage broker | 1 |
| W. H. Stephens, 39 Bedford Row, solicitor | 1 |
| C. G. Sherwood, 25 Millman Street, E.C., articled clerk | 1 |
| George Sauer, 11 Clement's Lane, journalist | 1 |

Registered without articles.



VACCINATION SHIELDS.

WE have received from Mr. William Cowan, of Springburn, Glasgow, a specimen of his vaccination shield which would prove very useful to protect the arm during the course of the pustules from the friction of the clothing. It is simply a convex wire cage, the parts touching the body being silken pads, with silken ribbons to hold it in place.

CUBIC CITRATE OF MAGNESIA.

A NOVELTY has been brought to our notice by Messrs. Wheeler & Co., of George Yard, Fenchurch Street, who are makers of a "patent compressed effervescent, commonly called citrate of magnesia." Instead of being in the granular form this is a powder which has been compressed into blocks or cubes, each weighing about $\frac{1}{4}$ oz. One or two of these blocks may be dropped into a glass of water, when the effervescence at once commences, but is not so rapid as when the granular salt is used. The patentees claim that by avoiding the heat necessary for granulating, their salt is presented in a better condition, and they assure us that they use only the finest ingredients, which they state to be—saccharine, tartaric and citric acids, bicarbonate of soda, and magnesia. The article is offered through the wholesale houses in small bottles for retail, or in the usual bottle bottles.

FRESH INDIAN BAEI FRUIT.

MESSRS. YOUNG & POSTANS have sent us a sample of fresh Indian Bael Fruit. At the end of 1877 Sir Joseph Fayrer, the Indian Doctor, called attention to this medicine in the columns of the *Medical Times and Gazette*. In India, he says, the fresh nearly ripe fruit is found to be very valuable in a large variety of bowel complaints, especially in chronic diarrhoea and dysentery. The dry fruit, as we generally see it in England, is probably inert, and the fluid extract of doubtful efficacy. The fruit is an orange with a woody highly aromatic rind. The sample sent us consists of candied sections of the pulp without the rind. In taste it resembles most candied fruits, with a hardly noticeable astringency, and a curious faint oily after-flavour. It is "nice-looking," and ought to be specially popular in the diarrhoea of children. The introducers state that Dr. Laing, who has used it largely in India, confirms Sir J. Fayrer's statement that there is no difficulty in obtaining a constant supply.

PRINTING LABELS ON GLASS.

SOME time ago we mentioned that specimens of printing on glass with a beautiful effect had been brought before us, and that the process was a German invention. The method by which the printing is accomplished is thus described by the *Gewerbe Zeitung*:—The patentee is Mr. V. Koepe, and his process consists, first, in obtaining a positive plate consisting of plaster of Paris, type metal, cement, kaoline, &c., from a wood-cut or electrotype. From the positive plate thus formed a negative is obtained, the preparation of which is as follows:—Fifty parts of good glue are soaked in 10 parts of water, 50 parts of glycerine are then added, and the mixture is exposed to gentle heat until the glue is

dissolved. One part of olive oil is next added, the mixture is again heated to a boiling point, and now a cast may be taken of the positive plate. On cooling, the shape is retained, but it remains very flexible. It may be attached to wooden plates or rollers, and is then ready for printing. By encasing the slender stem of the cast in a metal sheath, casts of single letters may be used as in the case of ordinary type. The colours are applied to the plates by means of rollers. The printing inks are composed of the desired shade of pigment, levigated with enough balsam of copaiba to form a paste of the consistence of butter, and to this Venice turpentine and 50 per cent. of semi-resinified oil of turpentine or lavender are added. Bronze powder may be applied immediately after printing, and the piece is then to be baked in an oven.



[The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by G. F. Redfern, Patent Agent, successor to L. de Fontaine-moreau & Co., 4 South Street, Finsbury, London; and at Paris and Brussels.]

Applications for Letters Patent:—

- Aerated Medical Beverage.**—No. 2815.—J. Huggett, of Liverpool. An improved aerated medical beverage. Dated July 10, 1879.
- Abstracting Colour from "Annatto," or "Arnatto."**—No. 3125.—W. McDonnell, of Limerick, Ireland. Improvements in the mode or means used for abstracting colour from "annatto," or "arnatto." Dated August 1, 1879.
- Alkali.**—No. 2939.—E. Carey, H. Gaskell, and F. Hunter, all of Widnes, Lancashire, chemical manufacturers. Improvements in the manufacture of alkali. Dated July 18, 1879.
- Artificial Teeth.**—No. 2771.—G. W. Von Nawroeki.—A communication from R. Telschow, of Berlin, Germany. Improvements in the manufacture of artificial teeth, and in apparatus therefor. Dated July 7, 1879.
- Bottles.**—No. 2838.—J. Yeo, of Edenhall, Penrith, Cumberland, blacksmith. Improvements in bottles. Dated July 11, 1879.
- Bottles and Stoppers.**—No. 2765.—O. Stephenson, of Wakefield Yorkshire. Improvements in bottles, and stoppers for the same. Dated July 7, 1879.
- Bottle-stoppers.**—No. 3119.—W. W. Bird, of St. Sampson's, Guernsey shipbroker. Improvements in stoppers for bottles and other receptacles. Dated August 1, 1879.
- Bottle-stoppers.**—No. 3124.—H. E. Phillipson, of Dublin. Improvements in stoppering bottles to prevent fraudulent abstraction of contents of same. Dated August 1, 1879.
- Colouring Matters.**—No. 2721.—F. De Lalande, of 22 Rue Doufers Rochereau, Paris, engineer. Improved new colouring matters. Dated July 4, 1879.
- Curing Toothache, &c.**—No. 2923.—C. H. Tiffen, of Hove, Sussex, chemist. A new and improved preparation for cure of toothache and neuralgia. Dated July 18, 1879.
- Dentists' Chairs.**—No. 3052.—S. Pitt.—A communication from S. F. White, of Philadelphia, Penn., United States. Improvements in dentists' chairs. Dated July 26, 1879.
- Hydrocarbons.**—No. 2860.—S. Pitt.—A communication from Dr. Philip Greiff, of Munich, Germany. Improvements in the productions of hydrocarbons such as benzole, toluole, naphthaline, anthracene, and their homologous substances which are suitable for the manufacture of colours. Dated July 14, 1879.
- Hydrofluosilicic Acid.**—No. 2745.—G. W. Von Nawroeki.—A communication from A. Zenisek and Dr. C. Schmidt. Improvements in apparatus for the commercial production of hydrofluosilicic acid. Dated July 5, 1879.
- Magnetic Stays.**—No. 2878.—W. Wilson, of Alpha House, Stokescroft, Bristol, Gloucestershire. Improvements in the manufacture of magnetic stays, corsets, bodices, and other female and male garments for the relief and cure of disease. Dated July 15, 1879.
- Medical Electric Apparatus.**—C. H. Carlson, of Lee, Kent. Improvements in an electric apparatus for medical and other purposes. Dated July 6, 1879.

Sulphate of Soda and Potassa.—No. 2809.—J. Hargreaves, of Widnes, Lancashire, chemist. Improvements in apparatus or appliances for the manufacture of sulphate of soda and potassa. Dated July 10, 1879.

Sulpho Acids of Rosaniline, &c.—No. 2828.—C. D. Abel.—A communication from E. Jacobsen, Berlin, Germany. Improvements in the production of sulpho acids of rosaniline and of the colouring matters derived therefrom, as also of alizarine and purpurine. Dated July 11, 1879.

Sulphuric Acid.—No. 2839.—W. E. A. Hartmann, of Trafalgar Terrace, Swansea, Glamorganshire. Improvements in the manufacture of sulphuric acid. Dated July 11, 1879.

Treating Tarry Oils.—No. 2720.—A. Gottheil.—A communication from A. Graetzel, of Hanover, Germany. Improvements in the treatment of tarry oils. Dated July 4, 1879.

Vaginal Syringe.—No. 3127.—R. H. Woodward, of New York, United States. Improvements in vaginal syringes. Dated August 1, 1879.

Vulcanising Dental Plates.—No. 2973.—J. S. Campbell, of North Plainfield, N.J., United States. Improvements in apparatus for curing by heat or vulcanising dental plates or other articles. Dated July 22, 1879.

Letters patent have been issued for the following :—

Ammonia.—No. 1481.—W. Müller, of Antwerp, Belgium, merchant, and E. Geisenberger, of Brussels, civil engineer. Improvements in means and apparatus for the manufacture of ammonia. Dated April 16, 1879.

Ammonia.—No. 1392.—W. Müller, of Antwerp, Belgium, merchant, and E. Geisenberger, of Brussels, Belgium, civil engineer. Improvements in means and apparatus for the manufacture of ammonia from the nitrogen of atmospheric air and hydrogen. Dated April 22, 1879.

Bottle-stoppers, &c.—No. 1605.—H. Codd, of 58 King William Street, London. Improvements in stopping the mouths of jars and bottles. Dated April 23, 1879.

Colouring Matters.—No. 447.—C. Casthélaç, of Paris. Novel products and colouring matters derived from chlorophthalic acids and nitrochlorophthalic acids. Dated February 4, 1879.

Colouring Matters.—No. 1864.—R. Meldola, chemist, of Atlas Works, Hackney Wick, London. The production of colouring matters from the sulphonic acids of the phenols and the diazo sulphonic acids of the amines. Dated May 10, 1879.

Eye-shade.—No. 2049.—W. R. Lake.—A communication from O. M. Holmes, of Boston, Mass., United States. An improved eye-shade. Dated May 22, 1879.

Pill-box.—No. 91.—A. Martin, of 13 Store Street, Bedford Square, London, engineer. A new match or pill box. Dated January 9, 1879.

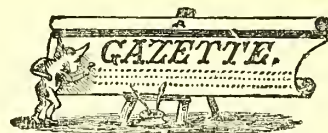
Recovery of Glycerine from Soap Leys.—No. 1282.—C. Thomas, soap manufacturer; W. J. Fuller, analytical chemist; and S. A. King, of Bristol, manager. Improvements in the recovery of glycerine from soap leys. Dated March 31, 1879.

Specifications published during the month :—

Postage 1d. each extra.

1878.

- 4544. C. A. Fawsitt. Obtaining ammonia. 4d.
 - 4768. J. H. Johnson. Boxes for dentifrice, &c. 6d.
 - 4930. S. Waters. Closing bottles, jars, &c. 2d.
 - 4961. H. C. Byshe. Magnetic appliances for curative purposes. 2d.
 - 4999. P. Lawrence. Bungs. 2d.
 - 5002. P. Laffitte and J. Pia. Apparatus for filling air-extracting, and corking bottles, &c. 6d.
 - 5032. J. Pearson. Apparatus for obtaining oil from seeds, &c. 2d.
 - 5045. T. Buchardt. Stopping bottles, &c. 2d.
 - 5052. P. H. Mort. Closing or covering drums or casks for containing caustic soda, &c. 6d.
 - 5057. C. D. Abel. Manufacture of pyroxyline. 6d.
 - 5077. W. Blackburn. Bottles, decanters, jars, &c. 2d.
 - 5158. J. Madocks. Stoppers for bottles. 6d.
 - 5159. R. V. Tuson. Preparation of sulphurous acid gas. 2d.
 - 5174. K. N. M. Douglas. Respirator. 4d.
 - 5198. G. Bernheim. Tooth-powder boxes, &c. 2d.
 - 5209. E. Edmonds. Stopping bottles, jars, &c. 8d.
 - 5216. J. McDougall. Oilcasks. 4d.
 - 5284. T. Fletcher. Dental compound. 2d.
- 1879.
- 83. R. V. Tuson. Disinfectants, &c. 2d.
 - 49. J. C. Newburn. Manufacture of phosphorus. 6d.



LIQUIDATIONS.

ABCOCK, WILLIAM GEORGE, trading as the Carbolic Sanitary Company, late the Old Government Sanitary Company, 21 Spurstowe Road, Hackney, and Railway Arches, Manor Place, Hackney Downs Railway Station, manufacturer. July 5.

BENTLEY, THOMAS EDWARD, Cleckheaton, drysalter. July 23.

FIRTH, WILLIAM, 24 Oxford Street, Bilston, chemist. July 25.

HINDLE, GEORGE EDWIN, 163 Clowes Street, West Gorton, Manchester, chemist, &c. July 10.

MITING, EBENEZER KENNARD, 100 St. Mary's Road, Faversham, manufacturing chemist. July 17.

REDDISH, JOHN, 39 Withy Grove, and Well Street, Manchester, and The Firs, Bowdon, druggist and drysalter. July 4.

STEPHENS, GEORGE THOMAS, 27 St. Owen Street, Hereford, chemist. July 29.

TUCKER, ROBERT LEWIS, 9 North Street, Bristol, chemist. July 18.

PARTNERSHIPS DISSOLVED.

CUNLIFFE & BARNES, Cunliffe Street, Ramsbottom, Lancaster, manufacturing chemists. July 23. Debts by E. Cunliffe.

FRY, J. S., & SONS, Union Street, Bristol, and 252 City Road, Middlesbrough, cocoa and chocolate manufacturers. December 31. As regards F. Fry. Debts by J. S. & F. J. Fry.

HAWKESBURY LANE CHEMICAL WORKS, Hawkesbury, Foles Hill, Warwick, chemical manufacturers. July 24. Debts by J. Gellatly.

TAYLOR & HALL, Marton Road, and Gurney Street, Middlesbrough, chemists. June 30. Debts by R. Hall.

WINTON CHEMICAL COMPANY, Winton, Patricroft, near Manchester, manufacturers of disinfectants. July 29.

ABSTRACTS OF SPECIFICATIONS.

FOR permission to print the following we are indebted to the courtesy of the *Engineer*:—

4526. Ammonia, MANUFACTURE OF, J. Young, jun.—Dated November 8, 1878. 6d.

Atmospheric air is passed over iron or other metal, carbon, or such chemical equivalent heated in a chamber, thus causing the air to part with its oxygen, leaving the nitrogen free. The free nitrogen is passed into a heated vessel containing carbonate of baryta and charcoal, or their equivalents which reduce steam when passed over them, so that the nitrogen may unite with the hydrogen from the steam and form ammonia.

5016. Silver AND Copper, TREATING ORES CONTAINING, H. J. Haddon.—Dated December 7, 1878.—(A communication.—Complete.) 4d.

The ores are treated with an acidulated solution of marine salt, whereby the transformation of the silver is rapidly and completely effected, even when cold, without the necessity of a previous calcination, the chloride of silver formed remaining in solution. By the addition to the ore of a small quantity of binoxide of manganese, the reaction is accelerated, and the solution of the chloride facilitated. All alkaline chlorides and earthy or metallic chlorides soluble in a solution of acidulated water may be employed instead of chloride of sodium, and will produce the like results.

4842. Cleansing MATERIAL, J. I. Isitt.—Dated November 28, 1878.—(Void.) 2d.

One pound of soda ash is dissolved in a gallon of water and boiled for four hours, when it is turned into shallow pans and more soda ash added until the water is absorbed. It is then left to crystallise for about 12 hours, when it is turned out, and broken into lumps or ground into powder. Fatty matter may be added during the boiling process in the proportion of about one-fifth part of the soda ash.

4737. Soda, MANUFACTURE OF SALTS OF, A. Cohen.—Dated November 21, 1878.—(A communication.) 6d.

Chloride of sodium is placed in a sheet-iron vessel into which a tube introduces water at the bottom. This vessel is placed in a larger vessel, into which the contents flow, and when the level is the same in both the water is turned off by means of a float. The second vessel communicates with a third, by which the solution of chloride of sodium is introduced into a receiver and is saturated with ammoniacal gas. The mixture thus obtained is saturated with carbonic acid, and forms bicarbonate of soda insoluble in the presence of soluble hydro-chlorate of ammonia.

EXCHANGE COLUMN.

TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of THE CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C., " the envelope to be endorsed also with the number. The Publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

Deposit of Money.—In order to ensure safety we offer the following system:—The purchaser of anything advertised in the Exchange Column may remit the amount to us. We shall acknowledge receipt to both parties by post-cards, and shall only pay it away on the advice of the remitter. Whether returned to him or paid to the seller, we shall charge a commission of 2½ per cent. on any money thus passing through our hands, and not less than 6d. on any single transaction. This arrangement should entirely prevent any cause of complaint or dissatisfaction arising out of this section of THE CHEMIST AND DRUGGIST.

FOR DISPOSAL.

Specie jars, 13 inches high. 32/32.
A new silver lever watch, cost 5*l.*, price 4*l.* 32/26.
Dental tools, &c., vulcanite, work table. Address, H. Pegg, 1 Ludgate Hill, Birmingham.
Pharmaceutical Journal posted on day of issue for twelve months, 10*s.* 6*d.* 31/36.
25-oz. tin Howard's quinine, 13*s.*; 100-oz. bottle Howard's morph. murr., 8*s.* 32/23.
First-rate paint mill, price 20*s.* Bowler, Chemist, Belper.
Glass percolator, graduated to 1 gallon, 20*s.*, cost 30*s.* Lea, Folkestone.
A few casks brown rubber, each 2 cwt.; offers requested. Orchard, Salisbury.
Pindar's rotary pill machine and piping-press for small pills; half price. W. M. Holmes, 63 Lupus Street, S.W.
Six gross 1*l.* squares gutta percha enamel, 4*d.* per dozen, any quantity sent post free. Fresson, Chemist, New Road, Southampton.
Patent medicines amounting, at wholesale price, to 2*l.* 17*s.*, wrappers slightly soiled, for 30*s.* Send for list. 30/3.
A Francis' No. 4 press, with extra type, cost 6*l.* 10*s.*, never used, sell for 4*l.*, carriage paid to Manchester. 32/10.
Necessary apparatus for mechanical dentistry (equal to new); stamp. Roberts, Chemist, Tipton.
Pharmaceutical Journal for 1876, '77, '78 cheap for cash. Sparshott, Handsworth, Birmingham.
Several pounds bronze, as previously advertised, still on offer; also 6 lbs. crimson bronze in bulk; sample packet ten stamps. Owen, chemist, Great King Street, Birmingham.
Cheap—4 petroleum tanks; 2 oil barrels, with massive brass taps, and several small lots of drugs, proprietary articles, &c. H., 87 Old Chester Road, Tranmere.

Offers wanted for quantity drop black, blue verditer, green ditto, Dutch pink, dry white lead, &c., cheap. Neale, Clippenham.

Pharmaceutical Journals, from January, 1875, to June, 1879, inclusive, two or three missing. What offers? Gill, Yeovil.

Howard's quinine, 7 oz.; 3 4-gallon carboys (one upright), plate glass, 67 inches by 24. What offers? 33/3.

Three show-jars, Maw's, fig. 23, two 21 inches, one 24 high, in good condition. Parkes, Reading.

Pharmaceutical Journals, from May 5, 1877, to August 16, 1879, 15*s.*; Howell, 61 High Street, Peckham, London, S.E.

Handsome mahogany fixtures, only six months in use; also specie jars, bottles, &c. Apply at 125 Mount Pleasant, Liverpool.

Student's Herbarium, containing the official and leading indigenous plants (120), recently mounted, classed and named, only 10*s.* 6*d.* Tully, Chemist, Tunbridge Wells.

Disposal.—Marble mortar on stand; small upright counter case; specie jar, shop; three light gas pendants; counter scales, &c. B., 11 Bridge Street, Goole, Yorks.

Copper boiler, still, worm, evaporating pan, with steam jackets; also, Coffey's Esculapian still, complete, with worm, &c.; tincture press, 2 gallons. 31/27.

Complete set of books for preliminary examination; everything requisite to pass; cash, 10*s.* 6*d.* "Junior," 19 Queen's Road, Brighton.

Pharmaceutical Journal, January, 1874, to October, 1877, and from January, 1878, to August, 1879, complete; cash offers. Parkes, 71 Bank Street, Maidstone.

"Chemistry as Applied to Arts and Manufactures," 8 vols., new, cost 80*s.*, will take 55*s.*; mahogany pill-machine, to cut 24 4-grain, 12*s.* 31/13.

Five cotton and silk elastic knee-stockings (misfits), never worn, at less than cost price to clear out. Sketch sent on application to Coley, Chemist, Stroud.

A 7½ inch dispensing beam, by Williams, with platina pans; weight 2 oz.; price, 50*s.* Apply to T. Townson, Enmore Road, Bridgwater.

Squire's "Companion," eighth edition; Liebig's "Hand-book Organic Analysis," second edition; Bentley's "Receipt Book," second edition; offers. Marchant, Debenham.

All books, Attfield's "Chemistry" excepted, advertised last month, still on sale. Piesse's "Perfumery," 7*s.* 6*d.* Letters to Alfred Davis, 161 Seven Sisters Road, N.

Chemists and druggists' shop fittings, complete, show bottles, jars, gold-labelled bottles, scales, weights, &c., &c. W. E. P., 45 Abbey-gate Street, Bury St. Edmunds.

The entire fittings, show-cases, and utensils of four chemists' shops for disposal; price, 40*l.*, 48*l.*, 60*l.*, 75*l.*: these are great bargains. Lloyd Rayner, 333 Kingsland Road, London, N.

A 25-gallon jacketed steam copper-pan, with head, &c., to convert it into a still; also a 15-gallon ditto, a 4-gallon, and a flat evaporating or extract pan, together with steam pipes, taps, and other laboratory fittings; also a powerful press, large mortars, &c. Apply to E. Hollier, Pharmaceutical Chemist, Dudley.

For Sale or Exchange.—A mill (pair of stones diameter 18 inches), suitable for grinding vitriol, nitre, &c., movable, two fly-wheels with handles. Apply to Halls, Chemist, Newark.

15 cwt. large wheaten biscuits, good condition, make excellent nourishing dog-biscuits, and sell well. Price 9*s.* 6*d.* per cwt., rather less for the lot. Sample free. Herbert Kemp, Horncastle.

Quantity of Sussex and Kent hops to be sold cheap in quantity; super ess. lemon warranted pure, 6*s.* 10*d.* per lb., 12-lb. coppers; pulv. rhei, E. L., 1*s.* 6*d.* per lb. Sowerby, Chemist, Middlesbrough.

Beut glass show-case, 60 inches by 24 inches, in good condition, like fig. 103 in Maw's list, but with sloping shelf; also one of Maw's prescription desks, cost 6*l.* 15*s.*, both to be sold cheap. Can be seen at 74 New Bond Street.

Hancock's prize mixing machine for mixing kali, baking-powder, &c., will mix 40 lbs. at one time, has not been used many times, not large enough for owner's use, cost 3*l.* 3*s.*, price 2*l.* 2*s.* Butler & Son, Chemists, Sanvey Gate, Leicester.

Miss Pratt's "Flowering Plants and Herbs," 6 vols., coloured illustrations, new, published 7*s.*, for 5*l.*; Statham's chemical cabinet and a quantity of other apparatus, &c., are particulars on application, cabinet alone cost 3 guineas, the lot for 3*l.* 10*s.* H. Wood, 16 Market Square, Dover.

Flat, hent, and upright mahogany cases, tooth forceps, earthenware show-jars, four coffee canisters, glass shelves, movable brackets, six paraffin lamps, few chimneys, globes, &c., for sale, anyone about to fit up a branch or commencing business will find this a cheap lot. Parker, 369 Leeds Road, Bradford.

Minor Students—50 questions asked of a successful candidate, 2*s.*; 30 prescriptions given to dispense at the Minor, 2*s.*; hints how and what to study, by a successful student, 1*s.*; 50 illegible prescriptions, 2*s.* 6*d.*; 60 mounted indigenous plants, 3*s.* "Chemist," care of Mr. Edwards, Wye, Kent.

Two Fox's tooth-keys and six claws, 7*s.* 6*d.*; sixteen 3*s.* McLeod's sheep dip, 1*s.* 6*d.*; four 1*s.* 1½*d.* Boulton's embrocation, 7½*d.*; six 2*s.* 9*d.* Frampton's pills, 1*s.* 6*d.*, soiled; two 2*s.* 6*d.* tamar indien, 1*s.* 6*d.*; six, 3*s.* 6*d.* Beaufoy's chloride soda, 1*s.* 6*d.*, soiled; 1 cwt. Parson & Fletcher's rice starch, 2*s.* Papers, cash, or exchange drug mill. Payne, Market Rasen, Lincolnshire.

Fifty questions asked of a successful student at the last Minor, 2*s.*; 30 prescriptions (catch and difficult) given to dispense at Minor during past twelve months, 2*s.*; fresh botanical specimens of medicinal and other indigenous plants, including aconite, belladonna, conium, &c., 5*s.* per set (carriage paid). Saunders, A.P.S., 79 Gaisford Street, N.W.

15 Cooper's fly-powder, 3 Cooper's fly-gall dressing, 9 Moody's leather varnish, 7 Freeman's plate-powder, 12 papier epispastique, 5 Taylor's red oils (quart), 2 Taylor's red oils (pint), 3 Taylor's red oils (½ pint) 2 Delcroix's vegetable extract, 8 Propert's polishing cream, 24 Propert's harness blacking, 44 Bird's styptic fluid, 43 Bird's disinfecting powders, 38 lbs. powdered vitriol. What offers for part or whole? Address, Robert Coley, 18 High Street, Leicester.

Fifty handsome 2 and 4 lb. lozenge-jars, with shield gold labels; 3 handsome leech, honey, and tamarind vases; 30 handsome gold-labelled show-jars, as fig. 6 Maw's; 140 60-oz. gold-labelled shop bottles; 2,500 second-hand gold-labelled shop bottles, all sizes; 80 upright and carboy-shape window show bottles; 1,500 earthenware ointment and ext. jars, all sizes, and various other goods. Lloyd Rayner, 333 Kingsland Road, London.

What offers?—Attfield's "Chemistry," Bentley's "Botany," Wills' "Materia Medica," with coloured plates, Wills' "Pharmacy," Wills' "Practical Analysis," Wills' "Handbook to Metric System and Physics," "Selecta & Prescriptis," Barber's "Pocket Pharmacopoeia," Southall's "Materia Medica," Lescher's "Elements of Pharmacy," little soiled, all in good condition, containing valuable notes for minor students. Williamson, 207 Copenhagen Street, Islington, London.

Fifty dozen shop bottles, 8s. doz.; quantity of new and second-hand ointment jars, very cheap; pill machine, to cut 24, 16s. 6d.; carboys, desks, cupboards, drawers, silvered plate glasses, pillar lamp, 50s.; a quantity of new blue ointment jars, new 25 per cent. Maw's list; 24 12-inch opaque blue fancy jars, as fig. D, 7s. 6d. each, worth 13s. each; fancy jars, fig. A, gold covers, elaborately labelled, 6s. 6d. each; carboys, spec. jars, and every requisite for chemist's shop, very cheap. E. Natali, 207 Old Street, London, E.C.

8-ft. dispensing-screen, as Maw's fig. 165, with silvered plate-glass back, 9l.; 4-ft. bent plate-glass counter-case, fig. 16, 50s.; 6-ft., as fig. 97, 5l.; 6-ft., as fig. 99, 6l. 10s.; a 4-ft., as fig. 95, 90s.; 3-ft. 6-in., as fig. 100, 65s.; several as fig. 100, but without shelf, 3-ft. long, 3-ft. 6-in. long, 4-ft. long, 5-ft. 2-in. long; 6-ft., as fig. 104, 7l.; 6-ft., as fig. 105, 7l.; tooth-brush cases, fig. 52, and a bent plate-glass one, at 35s.; French scales and grain scales, &c. E. Natali, 207 Old Street, almost opposite Great Eastern Street, E.C.

Wall-case, 8 feet high and 8 feet long, stained and polished, 7l. 10s.; black wall-case, with gilt-edged doors and bent-front ease in centre, mirror back, 8 feet long, 8½ feet high, 14l. 10s.; wall-case, new, pine-stained case, polished, 6 feet long, 120s.; desk and case, nearly new, 40s. and 45s.; dispensing screens, new and second-hand, 3 feet long, 60s.; 4 feet, 80s.; 5 feet, 90s.; 6 feet, 115s.; 7 feet 130s.; 8 feet, 160s.; 12 feet, 15l. Write for list, with 100 engravings of cases, to R. Tomlinson, Shop-fitter, St. Paul's Square, Birmingham.

A very elaborate dispensing-screen, glass case at each side, with a silvered plate-glass centre, and marble slab in front, the cases fitted with shifting shelves and silvered plate-glass backs at back of screen, the entire length fitted with three shelves for dispensing bottles; on top of cases very handsome tablets, "Dispensing" "Department," 8l. 10s., each 6 feet long and 7 feet long; a 14-feet 6-inch Spanish mahogany cupboard, plate-glass doors, 10l., a bargain. E. Natali, 207 Old Street, almost opposite Great Eastern Street, London, E.C.

Nests drawers, newly gold-labelled store and other bottles and jars, all sizes, show-bottles, spec. jars, desks, counter cases, pill machines; handsome dispensing screen, 5 feet high, 5 feet 9 long; large handsome lamp and scroll, iron mortars, shelving, cupboards, &c.; handsome cigar counter-case, 12 divisions gold-labelled, others not labelled; tobacco jars; sheet of plate-glass, in mahogany frame, 5 feet 10½ high, 4 feet 10½ wide; 2 mahogany doors, glazed with embossed glass; scales, mahogany show-stands, medical books, &c., all cheap. Lists sent. 846 Old Kent Road.

Beehive stove, ten-gallon pear-shaped carboy, gallon filter, Southall's Materia Medica Cabinet, *Chemist and Druggist, Pharmaceutical Journals*, missing numbers supplied, all years. E., 23 Sheffield Road, Barnsley.

Books invaluable to Minor students, especially beginners, all good condition, some quite new:—Williamson's "Chemistry" (organic and inorganic), published 8s. 6d., 5s.; Wilson's "Chemistry," published 5s., 3s.; Clements' "Organic," 4s.; Squire's "Companion," 8th edition, 6s.; Henfrey's "Botany," published 12s. 6d., 7s. 6d.; Oliver's "Botany," 3s.; Cooper's "Surgical Dictionary," published 28s., 10s.; "Chemists and Druggists' Directory," 1876, published 5s., 2s. 6d.; "Medical Directory," 1876, published 4s., 2s.; "Notes on Pharmacy," lent to copy, 5s.; 6d. each extra for postage, any excess returned; orders payable at Lawford Road. Saunders, Tutor, 79 Gaisford Street, N.W.

Chemists, Dentists, Surgeons.—Iron cistern, 40 gallons, brass tap, 15s.; ditto, 60 gallons, 20s.; pill machine, cuts 24, 5s.; brass scales in box, 1s.; powder folder, Maw's, fig. 3, 5s.; ear speculum, Kramer's, 3s. 6d.; tourniquet Signoroni's, 3s.; throat forceps, Maw's, fig. 40, 3s.; flat show case, 8s.; large dental show case, bent glass, 25s.; dental forceps, new, Weiss' upper stump, lower stump, lower front, lower bicuspid, Aitken's lower stump, upper stumps, irregular lower stumps, 3s. each; second-hand upper incisors, canines, bicusps, and bicusps right, 1s. each; "Dental Surgery," Lukyn's, 6d.; "Syphilis," by Dr. Bradley, 1s.; "Hand-book of Painting," 10d.; emery flour, 9s. cwt.; lamp black, 5s. cwt.; ground Venetian red, 2 cwt., 8s. 6d.; 2 1-gallon cans oak varnish, 11s.; 1 1-gallon can turpentine, 5s.; 3 doz. artists' tube colours, 7s. 6d.; 2 doz. 5-lb. tins burnt sienna, 4s. 3d.; 2 doz. 7½-lb. tins vandyke in water, 5s.; yellow ochre, 3s. 6d. cwt.; morph. hydrochlor. 1½ oz., 9s.; ext. saize Co., 1½ lbs., 3s. 6d.; ditto cinchon, ½ lb., 3s. 6d.; ditto colochin Co., 1 lb., 5s. 6d.; ditto colchic. acet. and several other important extracts at 8s. lot; dec. saize co. conc., 2s. 6d. lb.; pulv. pip. nig., 20 lbs., 6s.; plumh. acet., 18 lbs., 5s.; 4-gallon petroleum can with tap, 4s. Cash with order. Mr. Adams, 54 Oxford Street, Salford.

20 nests mahogany-fronted, gold-labelled shop-drawers, in all lengths, from 2 to 20 feet long, one 13 feet long; nest large chemist's drawers; one 2 feet 3 long, one 2 feet 3 long, one 2 feet 6 long, one 2 feet 8 long, one 3 feet long, one 3 feet 6 long, one 4 feet long, one 6 feet long, one 8 feet long, mahogany wall-cases; one 14 feet 6 long, one 17 feet long, one 20 feet long, handsome Spanish mahogany wall cases, with plate-glass doors to open, 6 plate-glass cupboards under; 8 complete fittings of gold-labelled shop-drawers, with lockers under, shelving and cornice above in all lengths; one 2 feet 6 long eboussed show-stand, similar to 85 Maw's; 2 soda-water stands, as 90 and 92 Maw's; 2 tooth-brush cases, as 52 and 72 Maw's; handsome counter show-cases, as fig. 73, 98, and 99 Maw's; soda-water stand, as 63 Maw's; mahogany counter-desk, as 37 Maw's; 3 cases and desks, as 38 and 39 Maw's; 4 upright counter-cases as 40 Maw's, all lengths; 8 handsome dispensing-case screens, in all lengths and designs; 15 mahogany-top counters; 8 mahogany window enclosures; 3 embossed and silvered plate-glass shop doors; 6 mahogany shop chairs, and every description of fittings and utensils required by the trade. Lloyd Rayner, 333 Kingsland Road, London.

First-class fixtures, nearly new, and very cheap, large and small nests of drawers, dummy ditto, glass knobs, six large, four small carboys, four elegant spec. jars, gold caps, two wall cases, two plate-glass counter cases (tent), 14 feet mahogany counter, syrup and other bottles, scales, &c. P. M., 8 Young Street, Kensington.

Spouge-case, fig. 92, plate glass, 5l.; desk, and glass case in front, fig. 21 Maw's list, 65s.; ditto ditto, fig. 39, 45s.; 4-ft. 6-in. dispensing-screen, 3l.; ditto ditto, 40 in. long, 40s.; a very handsome dispensing-screen, 6 ft. long, as Maw's fig. 78, labelled "Dispensing Department," price 5l.; a 5-ft. 9-in. ditto ditto, 5l.; a 7-ft. wall-case with cupboard under, as fig. 200, 14l.; nest fittings, 12 ft. long, Maw's fig. 197, 18l.; 4 nests good mahogany-fronted drawers—1 nest 2 ft. 8 in. long, 1 ditto 3 ft. 6 in., 1 ditto 8 ft., all to match, with lockers under, 1s. 6d. per drawer; some very good deal painted and grained mahogany drawers at 1s. 2d. each, in nests; 11-ft. 6-in. mahogany counter, fitted with 20 drawers, 8l.; 8-ft. 3-in. ditto ditto, 11 drawers, 6l.; 7-ft. 4-in. ditto ditto, fitted with 14 drawers, 6l.; 12-ft. Spanish mahogany counter, 16s. per foot; 8-ft. Spanish mahogany counter, fitted with 4 drawers, 8l.; 7-ft. mahogany counter, fitted with 13 drawers, 6l. 10s.; 10-ft. 8-in. mahogany-top counter, 90s. E. Natali, 207 Old Street, London, E.C.

FORMULÆ.

Receipt for a first-class face powder, equal to any, inexpensive, and certain to command a ready sale, 2s. free. "Fidcles," Windsor House, Sidmouth.

Valuable formula for chemical food, good colour and consistence, easily prepared, and at a small cost, theoretically correct; also an inseparable lime cream; effectual skin lotion, long used successfully; 6s. 28/2.

Excellent blue black ink (perfectly fluid, no deposit), white cherry tooth paste (delicately perfumed, never ferments), powder for cleaning sponges and hair-brushes (resembles Hassell's), these are genuine and reliable, 10s. each (guinea the three). Herbert Heblethwaite, Cumberland Market, Regent's Park, N.W.

Important Notice.—Having received great praise and recommendation for my formulæ lately advertised in *The Chemist and Druggist*, I have great pleasure in announcing that I will now supply (on receipt of P.O.O. for 1l.) a complete copy of my recipe book, which contains upwards of 200 most valuable formulæ, which are good stock and in every day demand; they also bear a good profit, &c. Further particulars of T. J. Lea, Chemist, &c., 43 Tontine Street, Folkestone.

Eau de Cologne (equal to genuine); fragrant foaming dentifrice (similar to Floriline); effervescent fruit saline (resembles Eno's); splendid black ink (never corrodes steel pens); marking ink (black or red); golden hair-wash; brilliantine (inseparable); bay rum (splendid imitation); hair colour restorer; pomade for removing and preventing scurf; Kaloderma, or skin beautifier; cherry tooth paste (never ferments); cement (equal to Coagiline); pill coating (pearly white); magic neuralgic drops (never-failing remedy); copaiba paste (transparent); with many others, send stamp for list. The toilet requisites are identical with those prepared by a renowned West-end perfumer; the others are equally good; all are inexpensive to prepare; 5s. each (five for 1l.); inquiry letters must be prepaid. "Analyst," care of Mr. Warnes, 79 Gaisford Street, N.W.

WANTED.

Barrow Evans' hair restorer. 32/29.
Small sponge case with glass-case top, cheap, cash. 32/19.
A dental show case for the window. Cavell, Long Sutton, Lincolnshire.
Last edition of Bentley and Hanbury's "Pharmacographia." Gill, Yeovil.
Pharmaceutical Journal, posted Monday after publication, state price. 32/27.
An extra large composition mortar. W. R. Taylor, Middlesborough.
A small set of dental forceps in good condition, 24/27.

Old carved oak furniture. Send full particulars and lowest price, Woodson, Sheffield.
Lindley's "School Botany," Wills' "Pharmacy," and a Latin dictionary. H. Gilby, Long Sutton, Lincolnshire.
Recipe for thoroughly good liniment or ointment to relieve coughs, asthma, bronchitis, &c. 31/3.
In good condition, Squire's "Companion" to B. P.; and Bentley's "Botany." Lewis Bird, 33 Drapery, Northampton.
A few copies of the *Chemist and Druggist* for February, 1878, 8d. each will be paid for first six copies received. Address, Publisher, *Chemist and Druggist*.

Two handsome specie jars; a few ointment jars with inside pots; counter desk, with glass case; other glass counter cases; also, any handsome addenda to chemist's shop, at tempting price. Address, stating particulars, to "Alpha," Messrs. Raines & Co., Liverpool.

The address of Mr. Charles Cooper, agent for blasting-powder, at. about 60, stout, slight stoop, hair white and curly, takes Pott's pills, supposed to be in Eastern Counties; also Mr. F. S. Bayley, solicitor, at. about 36, short-sighted, in company with Mr. Pugh, engineer. Bowling, Pembroke Dock.



A FRACTIONAL improvement is shown in the Board of Trade returns for July as regards our export trade. The total declared value of British exports had increased from 16,400,857*l.* in July, 1878, to 16,608,622*l.* in July, 1879. The record of the imports showed a large decrease from 35,000,000*l.* to 30,000,000*l.*

Alkali has been exported in considerably larger quantity than last year, but the return of value still shows a decline, the average difference between the values of last year and this being close on 20 per cent. Chemical products exported, in which quinine to America would make a considerable item, were worth 185,031*l.* in July, 1879, against 169,018*l.* in July, 1878.

Heavy chemicals have become somewhat firmer, an advance of 2*s.* 6*d.* per ton over last month having been established, for example, in soda crystals. The demand is very satisfactory for this time of the year, and it is reported that forward contracts are more readily entered into by buyers.

A large business has been transacted in powdered arsenic, resulting in an advance to 1*l.*s. per cwt. Sulphate of ammonia has also been over-sold, and is dearer.

The trade in tartaric and citric acids has been adversely affected by the absence of sunshine this year, and both have reached a very low point.

A further decline in quicksilver has occurred, which brings mercurials to a lower price also. The Californian mines seem to be able to monopolise foreign markets, and thus to make the European supply more than sufficient for the demand here.

Quinine has fairly maintained its price, but for forward delivery slightly lower quotations are now accepted. Considerable stocks have been sent to America, where the immediate effect of the removal of the duty was an advance of price to the extent of about 25*e.* per oz.

Iodine firm at 14*l.* Makers of iodide of potassium have advanced their quotations from 16*s.* to 16*s.* 6*d.*

In the drug market, aloes have been firm, cardamoms scarce and dearer, eamphor in more demand, and selling up to 80*s.* Refiners have advanced their quotations to 1*s.* 1½*d.* Cinchona bark has sold freely, but prices have been scarcely maintained. Balsam capivi firm at previous prices; Peru not quite so dear. Ambergis sold at 65*s.* for fair; fine bought in at 90*s.* Belgian camomiles bought in at 70*s.*

Some of the new opium has arrived, and prices have become rather dearer in the belief that the new crop will not suffice to meet demands. It is now estimated that the crop will yield rather less than 4,000 cases, but the latter calculation, as we intimated last month, may most probably be

relied on. Even at that, the price may be expected to harden somewhat as the season advances, and this may be looked for even if some weak holders should occasion flatness in the market during the next few weeks. It must not be forgotten, too, that there is always also the possibility of an export duty, which the Turkish Government may at any moment affix.

Foreign honey is offered at lower prices, and, with that of home production scarce, is worth attention.

Essences of lemon and bergamot have both become firmer, in consequence of reports of injury to the growing crops. Otto of roses, however, is being offered at lower prices than before the war. English oil of peppermint is not likely to be so scarce as was anticipated.

Jaborandi leaves have reached our market in quantity, and may be bought at 1*s.* 3*d.* to 1*s.* 6*d.* Buchu leaves rather firmer, and the best qualities of E. I. senna are also scarce.

The fluctuations in the oil market have been unimportant. In olive oils there have been very few transactions, and no advance, but reports of higher prices being paid still reach us from Italy. Petroleum has been selling at 6½*d.*, and there seems no immediate prospect of any recovery.

The indigo sales of last month realised an advance of 9*d.* from the prices paid in April for finest qualities, but a less advance for the commoner sorts. Shellac has again become firmer, but cochineal has sold with a dull tone at from 1*l.* to 2*l.* below previous rates.

Stocks of drugs in the port of London on July 31 1879:—

| | 1879 | 1878 | | 1879 | 1878 |
|------------------------|--------|--------|----------------------|--------|--------|
| Aloescs | 941 | 1,767 | Gum (Cont)— | | |
| "kegs | 11 | 14 | Assafoetida pkgs | 480 | 337 |
| "gourds | 702 | 1,003 | Benjamin.. " | 936 | 896 |
| Aniseed, Star chts | 588 | 843 | Damar..... " | 745 | 1,261 |
| Arrowrootcs | 13,361 | 17,740 | Gambum .. " | 13 | 25 |
| " bxs & tins | 14,613 | 8,535 | Gamboge.. " | 185 | 202 |
| Balsam.....cs, &c. | 56 | 142 | Guaicum.. " | 36 | 25 |
| Bark, Medicinal | | | Kino " | 32 | 18 |
| cks, &c. | 368 | 860 | Kowrietins | 838 | 943 |
| snrs, &c. | 14,418 | 9,463 | Masticpkgs | 140 | 180 |
| Borax.....pkgs | 622 | 874 | Myrrh, E.I. " | 190 | 300 |
| Bees' Wax ..bls & snrs | | | Olibanum.. " | 2,280 | 2,546 |
| " cks & cs | 627 | 479 | Sandarac.. " | 624 | 1,054 |
| " cakes | 2,820 | 1,500 | Senegal.....tins | 48 | 18 |
| Wax, Jap.veg. pkgs | 3,846 | 228 | Tragacanth pkgs | 2,400 | 1,347 |
| Camphorpkgs | 904 | 2,278 | Ipecac.cs & bgs | 203 | 239 |
| Cardamomschts | 373 | 343 | Jalapbls | 417 | 455 |
| Coc. Ind. bgs, &c. | 1,452 | 1,895 | Nux Vomica pkgs | 2,025 | 4,650 |
| Colombo root pkgs | 642 | 601 | Oil— | | |
| Cream Tartar..cs | 108 | 87 | Castorcs | 6,317 | 4,079 |
| Cubeb.....bgs | 126 | 184 | "cs | 1,292 | 743 |
| Dragonsblood chts | 41 | 107 | Palmtins | 3,351 | 1,438 |
| Galls, E.I. cks & cs | 2,220 | 5,799 | Cocanuttins | 790 | 891 |
| M'terranean sks | 569 | 1,012 | Olivecs, &c. | 70 | 243 |
| Gum— | | | Aniseedcs | 276 | 597 |
| Ammoniac pkgs | 473 | 544 | Cassiacs | 736 | — |
| Ambru & Cojal | | | Opiumchts, &c. | 1,379 | 1,397 |
| pkgs | 3,604 | 7,979 | Rhubarb.....chts | 592 | 958 |
| Arabic, Barbary | | | Sarsaparillabls | 1,288 | 1,896 |
| pkgs | 1,347 | 919 | Sennabls, &c. | 41,653 | 43,311 |
| Turkey .. " | 780 | 359 | Shellac.....chts &c. | 1,751 | 1,191 |
| E.I..... " | 1,299 | 2,295 | Turmerictins | 112 | 29 |
| | | | Vermilion | | |

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.

| | 1879. | | 1878. | |
|--|-----------|------------------|-----------|------------------|
| ACIDS— | <i>s.</i> | <i>d.</i> | <i>s.</i> | <i>d.</i> |
| Acetic per lb. | 0 | 24 to 0 34 | 0 | 24 to 0 0 |
| Citric | 1 | 8 1/2 .. 1 8 1/2 | 2 | 5 .. 0 0 |
| Hydrochloric .. per cwt. | 5 | 0 .. 7 0 | 4 | 0 .. 7 0 |
| Nitric per lb. | 0 | 4 1/2 .. 0 0 | 0 | 4 1/2 .. 0 0 |
| Oxalic | 0 | 4 .. 0 0 | 0 | 4 1/2 .. 0 0 |
| Sulphuric | 0 | 0 1/2 .. 0 1 | 0 | 0 1/2 .. 0 1 |
| Tartaric crystal .. | 1 | 3 1/2 .. 1 4 | 1 | 6 .. 0 0 |
| powdered .. | 1 | 3 1/2 .. 1 4 | 1 | 6 .. 0 0 |
| ANTIMONY ore | 240 | 0 .. 300 0 | 240 | 0 .. 300 0 |
| crude .. per cwt. | 36 | 0 .. 0 0 | 37 | 0 .. 0 0 |
| star .. | 49 | 0 .. 50 0 | 49 | 0 .. 49 6 |
| ARSENIC, lump | 24 | 0 .. 0 0 | 26 | 0 .. 0 0 |
| powder .. | 11 | 0 .. 0 0 | 8 | 6 .. 8 9 |
| BRIMSTONE, rough .. per ton | 105 | 0 .. 110 0 | 110 | 0 .. 115 0 |
| roll .. per cwt. | 9 | 6 .. 10 3 | 9 | 0 .. 0 0 |
| flour .. | 10 | 6 .. 12 3 | 11 | 6 .. 13 0 |
| IODINE, dry per oz. | 1 | 2 .. 0 0 | 1 | 0 .. 0 0 |
| MAGNESIA, calcined .. per lb. | 1 | 10 .. 0 0 | 1 | 10 .. 0 0 |
| MERCURY per bottle | 117 | 6 .. 0 0 | 140 | 0 .. 0 0 |
| MINIUM, red per cwt. | 15 | 3 .. 0 0 | 19 | 0 .. 0 0 |
| orange .. | 23 | 6 .. 0 0 | 30 | 0 .. 0 0 |
| PRECIPITATE, red .. per lb. | 3 | 1 .. 0 0 | 3 | 5 .. 0 0 |
| white .. | 3 | 0 .. 0 0 | 3 | 4 .. 0 0 |
| PRUSSIAN BLUE .. | 0 | 0 .. 0 0 | 0 | 0 .. 0 0 |
| SALTS— | | | | |
| Alum | 122 | 6 .. 125 0 | 125 | 0 .. 0 0 |
| powder .. | 140 | 0 .. 0 0 | 145 | 0 .. 0 0 |
| Ammonia: | | | | |
| Carbonate | 0 | 6 1/2 .. 0 6 1/2 | 0 | 6 1/2 .. 0 6 1/2 |
| Hydrochlorate, crude, | | | | |
| white | 600 | 0 .. 760 0 | 600 | 0 .. 720 0 |
| British (see Sal Am.) | | | | |
| Sulphate | 380 | 0 .. 400 0 | 400 | 0 .. 410 0 |
| Argol, Cape | 75 | 0 .. 82 0 | 75 | 0 .. 82 0 |
| Red .. | 56 | 0 .. 70 0 | 52 | 0 .. 70 0 |
| Oporto, red .. | 28 | 0 .. 30 0 | 32 | 6 .. 33 0 |
| Sicily .. | 60 | 0 .. 65 0 | 60 | 0 .. 65 0 |
| Ashes (see Potash and Soda) | | | | |
| Bleaching powd. .. per cwt. | 5 | 9 .. 6 0 | 6 | 0 .. 0 0 |
| Borax, British refined .. | 35 | 0 .. 36 0 | 35 | 0 .. 0 0 |
| Calomel | 2 | 8 .. 0 0 | 3 | 0 .. 0 0 |
| Copper: | | | | |
| Sulphate per cwt. | 18 | 0 .. 18 3 | 18 | 3 .. 18 6 |
| Copperas, green .. per ton | 50 | 0 .. 55 0 | 50 | 0 .. 55 0 |
| Corrosive Sublimate p. lb. | 2 | 1 .. 0 0 | 2 | 5 .. 0 0 |
| Cr. Tartar, French, p. cwt. | 103 | 0 .. 104 0 | 107 | 0 .. 0 0 |
| brown .. | 80 | 0 .. 82 6 | 85 | 0 .. 0 0 |
| Epsom Salts per cwt. | 4 | 3 .. 6 0 | 4 | 3 .. 6 0 |
| Glauber Salts | 3 | 0 .. 4 6 | 3 | 0 .. 4 6 |
| Magnesia: Carbonate .. | 47 | 6 .. 0 0 | 47 | 6 .. 0 0 |
| Potash: | | | | |
| Bichromate per lb. | 0 | 5 .. 0 0 | 0 | 3 1/2 .. 0 0 |
| Carbonate: | | | | |
| Potashes, Canada, 1st | | | | |
| sort | 22 | 0 .. 0 0 | 23 | 0 .. 23 6 |
| Pearlshashes, Canada, 1st | | | | |
| sort | 45 | 0 .. 0 0 | 32 | 0 .. 33 0 |
| Chlorate per lb. | 0 | 6 .. 0 6 1/2 | 0 | 6 1/2 .. 0 7 |
| Prussiate | 0 | 10 .. 0 11 | 0 | 10 .. 0 9 |
| red .. | 1 | 8 .. 1 10 1/2 | 1 | 8 .. 1 9 |
| Tartrate (see Argol and Cream of Tartar) | | | | |
| Potassium: | | | | |
| Bromide | 1 | 7 1/2 .. 0 0 | 0 | 0 .. 0 0 |
| Chloride per cwt. | 6 | 6 .. 0 0 | 6 | 6 .. 0 0 |
| Iodide | 16 | 6 .. 0 0 | 15 | 0 .. 15 6 |
| Quinine: | | | | |
| Sulphate, British, in | | | | |
| bottles per oz. | 13 | 6 .. 0 0 | 12 | 0 .. 12 6 |
| Sulphate, French .. | 13 | 6 .. 13 9 | 12 | 0 .. 12 6 |
| Sal Acetos | 0 | 6 .. 0 6 1/2 | 0 | 6 1/2 .. 0 7 |
| Sal Ammoniac, Brit. cwt. | 44 | 0 .. 45 0 | 42 | 0 .. 43 0 |
| Saltpetre: | | | | |
| Bengal, 6 per cent. or | | | | |
| under | 18 | 6 .. 19 0 | 19 | 6 .. 19 9 |
| Bengal, over 6 per cent. | | | | |
| per cwt. | 17 | 6 .. 18 3 | 18 | 3 .. 19 6 |
| British, refined .. | 22 | 6 .. 23 9 | 24 | 6 .. 2 9 |
| Soda: Bicarb. mate, p. cwt. | 9 | 0 .. 9 3 | 10 | 3 .. 0 0 |
| Carbonate: | | | | |
| Soda Ash .. per deg. | 0 | 1 1/2 .. 0 0 | 0 | 1 1/2 .. 0 0 |
| Soda Crystals per ton | 63 | 9 .. 0 0 | 75 | 0 .. 77 6 |
| Caustic .. | 9 | 3 .. 9 6 | 11 | 3 .. 11 9 |
| Hyposulphite, per cwt. | 0 | 0 .. 0 0 | 0 | 0 .. 0 0 |
| Nitrate | 14 | 9 .. 15 0 | 15 | 0 .. 15 6 |
| Zinc Sulphate .. | 16 | 6 .. 0 0 | 18 | 0 .. 0 0 |
| SUGAR OF LEAD, White cwt. | 38 | 0 .. 0 0 | 37 | 6 .. 0 0 |
| Brown, cwt. | 26 | 6 .. 0 0 | 26 | 6 .. 0 0 |

| | 1879. | | 1878. | |
|--|-----------|------------------|-----------|------------------|
| | <i>s.</i> | <i>d.</i> | <i>s.</i> | <i>d.</i> |
| VERDIGRIS per lb. | 0 | 0 to 0 0 | 1 | 1 to 1 5 |
| VERMILION, English .. | 2 | 2 .. 0 0 | 2 | 6 .. 2 8 |
| China .. | 2 | 4 .. 0 0 | 2 | 6 .. 0 0 |
| DRUGS. | | | | |
| ALOES, Hepatic per cwt. | 70 | 0 .. 160 0 | 80 | 0 .. 180 0 |
| Socotrine .. | 100 | 0 .. 200 0 | 90 | 0 .. 200 0 |
| Cape, good .. | 50 | 0 .. 53 0 | 49 | 0 .. 50 0 |
| Inferior | 48 | 0 .. 49 0 | 46 | 0 .. 48 0 |
| Barbadoes .. | 60 | 0 .. 240 0 | 40 | 0 .. 140 0 |
| AMBERGRIS, grey | 47 | 0 .. 90 0 | 67 | 6 .. 85 0 |
| BALSAM— | | | | |
| Canada | 0 | 9 .. 1 0 | 1 | 1 .. 1 2 |
| Capivi | 1 | 4 .. 2 0 | 1 | 3 .. 1 9 |
| Peru | 7 | 0 .. 8 0 | 4 | 0 .. 4 6 |
| Tolu | 2 | 6 .. 2 9 | 3 | 9 .. 4 0 |
| BARKS— | | | | |
| Canella alba | 17 | 0 .. 25 0 | 0 | 0 .. 0 0 |
| Cascarilla | 20 | 0 .. 26 0 | 16 | 6 .. 23 0 |
| Peru, crown & grey per lb. | 1 | 3 .. 2 4 | 1 | 0 .. 2 10 |
| Calisaya, flat .. | 2 | 0 .. 4 6 | 2 | 6 .. 4 6 |
| quill .. | 1 | 2 .. 5 6 | 4 | 0 .. 8 6 |
| Cartagena .. | 1 | 4 .. 4 2 | 1 | 4 .. 4 6 |
| Columbian .. | 1 | 10 .. 8 0 | 1 | 6 .. 6 9 |
| E. I. | 1 | 0 .. 3 9 | 0 | 0 .. 0 0 |
| good & fine .. | 4 | 0 .. 10 6 | 0 | 0 .. 0 0 |
| Pitayo | 1 | 6 .. 3 3 | 0 | 6 .. 1 6 |
| Red | 3 | 6 .. 10 6 | 3 | 0 .. 8 0 |
| Buchu Leaves | 0 | 1 1/2 .. 1 5 | 0 | 2 1/2 .. 1 3 |
| CAMPHOR, China .. per cwt. | 77 | 6 .. 80 0 | 85 | 0 .. 87 6 |
| Japan .. | 77 | 6 .. 80 0 | 90 | 0 .. 92 6 |
| Refin. Eng. per lb. | 1 | 1 1/2 .. 0 0 | 1 | 3 .. 0 0 |
| CANTHARIDES | 1 | 7 .. 4 6 | 1 | 9 .. 4 6 |
| CHAMOMILE FLOWERS p. cwt. | 20 | 0 .. 80 0 | 60 | 0 .. 80 0 |
| CASTOREUM | 25 | 0 .. 30 0 | 9 | 0 .. 30 0 |
| DRAGON'S BLOOD, l. p. cwt. | 115 | 0 .. 265 0 | 150 | 0 .. 240 0 |
| FRUITS AND SEEDS (see also Seeds and Spices). | | | | |
| Anise, China Star per cwt. | 80 | 0 .. 90 0 | 80 | 0 .. 90 0 |
| Spanish, &c. | 35 | 0 .. 40 0 | 34 | 0 .. 50 0 |
| Beans, Tonquin .. per lb. | 4 | 6 .. 6 6 | 1 | 9 .. 5 0 |
| Cardamoms, Malabar | | | | |
| good | 6 | 6 .. 9 6 | 6 | 0 .. 6 6 |
| inferior .. | 2 | 6 .. 6 0 | 2 | 0 .. 5 10 |
| Aleppy .. | 3 | 0 .. 9 0 | 2 | 0 .. 6 6 |
| Madras .. | 2 | 0 .. 7 6 | 2 | 8 .. 4 6 |
| Ceylon .. | 3 | 0 .. 4 0 | 3 | 0 .. 4 3 |
| Cassia Fistula | 40 | 0 .. 46 0 | 80 | 0 .. 89 0 |
| Castor Seeds .. | 0 | 0 .. 0 0 | 0 | 0 .. 0 0 |
| Cocculus Indicus .. | 7 | 3 .. 8 6 | 7 | 9 .. 10 0 |
| Colocynth, apple .. per lb. | 1 | 3 .. 1 6 | 1 | 0 .. 1 9 |
| Croton Seeds | 28 | 0 .. 30 0 | 28 | 0 .. 31 0 |
| Cubebs | 45 | 0 .. 50 0 | 32 | 0 .. 35 0 |
| Cumin | 20 | 0 .. 40 0 | 20 | 0 .. 35 0 |
| Dividivi | 12 | 0 .. 15 6 | 12 | 0 .. 16 0 |
| Fennugreek | 0 | 0 .. 0 0 | 6 | 0 .. 12 0 |
| Guinea Grains .. | 86 | 6 .. 0 0 | 28 | 6 .. 3 0 |
| Juniper Berries .. | 0 | 0 .. 0 0 | 3 | 6 .. 6 0 |
| Nux Vomica .. | 6 | 6 .. 9 0 | 9 | 0 .. 12 0 |
| Tamarinds, East India .. | 8 | 0 .. 15 0 | 12 | 0 .. 19 0 |
| West India .. | 11 | 0 .. 20 0 | 19 | 0 .. 25 0 |
| Vanilla, large per lb. | 38 | 0 .. 40 0 | 16 | 0 .. 21 0 |
| inferior .. | 13 | 0 .. 37 6 | 12 | 0 .. 15 0 |
| GINGER, Preserved, per lb. | 0 | 5 .. 0 6 | 0 | 5 1/2 .. 0 6 |
| HONEY, Chili per cwt. | 30 | 0 .. 34 0 | 30 | 0 .. 50 0 |
| Jamaica .. | 32 | 0 .. 40 0 | 35 | 0 .. 41 0 |
| Australian .. | 0 | 0 .. 0 0 | 0 | 0 .. 0 0 |
| IPECACUANHA per lb. | 4 | 3 .. 4 6 | 4 | 4 .. 5 0 |
| ISINGLASS, Brazil .. | 2 | 6 .. 5 6 | 2 | 4 .. 5 0 |
| Tongue sort .. | 3 | 0 .. 5 0 | 3 | 4 .. 5 6 |
| East India .. | 0 | 9 .. 4 1 | 1 | 4 .. 5 0 |
| West India .. | 2 | 10 .. 4 10 | 3 | 8 .. 4 6 |
| Russ. long staple .. | 6 | 0 .. 10 6 | 6 | 0 .. 14 0 |
| inferior .. | 0 | 0 .. 0 0 | 0 | 0 .. 0 0 |
| Simovia .. | 1 | 6 .. 2 6 | 1 | 6 .. 3 0 |
| JALAP, good | 0 | 11 .. 1 0 | 0 | 9 .. 0 11 |
| infer. & stems .. | 0 | 9 .. 0 10 1/2 | 0 | 7 .. 0 8 |
| LEMON JUICE per degree | 0 | 0 1/2 .. 0 1 1/2 | 0 | 0 1/2 .. 0 1 1/2 |
| LIME JUICE | 1 | 3 .. 1 7 | 1 | 7 .. 1 9 |
| LIQUORICE, Spanish per cwt. | 3 | 0 .. 36 0 | 34 | 0 .. 39 0 |
| Liquorice Root .. | 29 | 0 .. 39 0 | 0 | 0 .. 0 0 |
| MANNA, flaky | 0 | 0 .. 0 0 | 3 | 6 .. 4 0 |
| small .. | 0 | 0 .. 0 0 | 1 | 4 .. 1 6 |
| MUSK, Pod | 16 | 0 .. 61 0 | 21 | 0 .. 55 0 |
| Grain | 30 | 0 .. 51 0 | 0 | 0 .. 0 0 |
| OILS (see also separate list) | | | | |
| Almond, expressed per lb. | 1 | 7 .. 0 0 | 1 | 10 .. 0 0 |
| Castor, 1st pale .. | 0 | 4 1/2 .. 0 5 1/2 | 0 | 5 1/2 .. 0 5 1/2 |
| second .. | 0 | 3 1/2 .. 0 4 | 0 | 4 1/2 .. 0 5 |
| Cod Liver | 2 | 6 .. 4 6 | 2 | 9 .. 5 0 |
| Croton | 0 | 2 1/2 .. 0 3 | 0 | 2 1/2 .. 0 3 1/2 |
| Essential Oils: | | | | |
| Almond | 20 | 0 .. 0 0 | 25 | 0 .. 0 0 |
| Anise-seed | 8 | 6 .. 8 9 | 6 | 9 1/2 .. 0 0 |
| Bergamot | 6 | 0 .. 9 0 | 10 | 0 .. 15 0 |
| Cajeput | 3 | 6 .. 4 0 | 3 | 0 .. 3 6 |
| Caraway | 0 | 0 .. 0 0 | 9 | 0 .. 9 3 |
| Cassia | 3 | 2 .. 3 3 | 2 | 9 .. 0 0 |
| Cinnamon | 3 | 9 .. 5 0 | 4 | 8 .. 5 0 |
| Cinnamon-leaf .. | 0 | 1 1/2 .. 0 1 1/2 | 0 | 2 .. 0 0 |
| Citronelle | 0 | 3 1/2 .. 0 0 | 0 | 2 1/2 .. 0 0 |
| Clove | 8 | 9 .. 0 0 | 7 | 6 .. 0 0 |
| Ginger Grass .. | 0 | 2 1/2 .. 0 3 | 0 | 2 1/2 .. 0 3 |
| Lavender | 0 | 0 .. 0 0 | 1 | 8 .. 7 0 |
| Lemon | 3 | 0 .. 5 6 | 5 | 0 .. 8 6 |
| Lemongrass | 0 | 3 1/2 .. 0 0 | 0 | 2 1/2 .. 0 6 |
| Neroli | 0 | 0 .. 0 0 | 3 | 0 .. |

| | 1879. | | 1878. | |
|----------------------------------|-------|--------|-------|-------|
| Essential Oils, continued:— | s. d. | s. d. | s. d. | s. d. |
| Nutmeg per oz. | 0 3 | 0 3 | 0 4 | 0 0 |
| Orange per lb. | 0 0 | 0 0 | 4 3 | 7 0 |
| Otto of Roses per oz. | 12 0 | 23 0 | 22 0 | 40 0 |
| Patchouli " | 0 0 | 0 0 | 1 6 | 3 0 |
| Peppermint: | | | | |
| American per lb. | 10 0 | 14 0 | 10 3 | 12 6 |
| English " | 21 0 | 23 0 | 24 0 | 25 0 |
| Japan " | 6 0 | 6 6 | 0 0 | 0 0 |
| Rosemary " | 0 0 | 0 0 | 2 0 | 2 3 |
| Sassafras " | 2 0 | 2 3 | 2 0 | 2 3 |
| Spearmint " | 8 0 | 9 0 | 12 0 | 15 0 |
| Thyme " | 0 0 | 0 0 | 0 0 | 0 0 |
| Mace, expressed per oz. | 0 5 | 0 0 | 0 6 | 0 7 |
| OPIMUM, Turkey per lb. | 16 0 | 19 0 | 14 6 | 15 0 |
| inferior " | 12 6 | 15 0 | 11 6 | 12 6 |
| QUASSIA (bitter wood) per ton | 100 0 | 130 0 | 100 0 | 130 0 |
| RHUBARB, China, good and | | | | |
| fine per lb. | 2 10 | 4 0 | 1 7 | 4 1 |
| Mid. to ord. " | 0 8 | 2 0 | 0 6 | 1 4 |
| Dutch Trimmed. " | 0 0 | 0 0 | 0 0 | 0 0 |
| ROOTS—Calumba, per cwt. | 27 0 | 40 0 | 20 0 | 40 0 |
| China " | 28 0 | 30 0 | 0 0 | 0 0 |
| Chiretta per lb. | 0 2½ | 0 4 | 0 3 | 0 4 |
| Galangal per cwt. | 21 0 | 23 0 | 22 0 | 23 0 |
| Gentian " | 16 0 | 20 0 | 19 0 | 21 0 |
| Hellebore " | 0 0 | 0 0 | 0 0 | 0 0 |
| Orris " | 20 0 | 45 0 | 55 0 | 65 0 |
| Pellitory " | 0 0 | 0 0 | 10 0 | 76 0 |
| Pink per lb. | 1 0 | 1 4 | 0 0 | 0 0 |
| Rhatany " | 0 2 | 0 5 | 0 4 | 0 7 |
| Seneka " | 1 9 | 1 10 | 2 11 | 3 0 |
| Snake " | 0 0 | 0 0 | 0 19 | 1 0 |
| SAFFRON, Spanish " | 35 0 | 42 0 | 20 0 | 25 0 |
| SALEP per cwt. | 100 0 | 120 0 | 240 0 | 300 0 |
| SARSAPARILLA, Lima per lb. | 0 4 | 0 6 | 0 6 | 0 7 |
| Guayaquil " | 1 1 | 1 4 | 0 0 | 0 0 |
| Honduras " | 1 1 | 1 4 | 0 11 | 1 3 |
| Jamaica " | 1 6 | 1 10 | 1 2 | 1 9 |
| SASSAFRAS per cwt. | 0 0 | 0 0 | 9 0 | 11 0 |
| SCAMMONY, Virgin per lb. | 20 0 | 29 0 | 0 0 | 0 0 |
| second & ordinary " | 8 0 | 18 0 | 0 0 | 0 0 |
| SENA, Bombay " | 0 0½ | 0 2½ | 0 0 | 0 0 |
| Tinnivelly " | 0 2 | 0 9 | 0 1½ | 1 3 |
| Alexandria " | 0 3½ | 1 6 | 0 5 | 1 6 |
| SPEARMINT, refined " | 1 3 | 0 0 | 1 4 | 0 0 |
| American " | 1 1½ | 1 2 | 1 3 | 0 0 |
| SQUILLS " | 0 1 | 0 3 | 0 2½ | 0 4 |
| GUMS. | £ s. | £ s. | £ s. | £ s. |
| AMMONIAC drop per cwt. | 1 10 | 2 0 | 1 18 | 2 5 |
| lump. " | 0 10 | 1 7½ | 0 15 | 1 15 |
| ANIMI, fine washed " | 14 0 | 15 10 | 14 0 | 15 10 |
| boldscraped " | 12 0 | 13 15 | 12 0 | 13 10 |
| sorts " | 9 10 | 11 17½ | 8 15 | 11 10 |
| dark " | 7 5 | 9 0 | 3 10 | 8 0 |
| ARABIC, R.I., fine | | | | |
| pale picked " | 2 15 | 3 12 | 2 15 | 3 0 |
| sorts, md. to fin. " | 1 18 | 2 14 | 2 2 | 2 14 |
| garblings " | 1 13 | 1 15 | 1 5 | 2 0 |
| TURKEY, pick. gd. to fin. " | 7 0 | 9 15 | 5 0 | 9 0 |
| second & inf. " | 3 10 | 5 10 | 3 0 | 5 15 |
| in sorts " | 1 10 | 3 5 | 2 10 | 3 16 |
| Gedda " | 1 8 | 2 0 | 1 12 | 1 19 |
| BARBARY, brown. " | 3 0 | 3 5 | 2 10 | 2 15 |
| AUSTRALIAN " | 1 15 | 2 4 | 2 2 | 2 10 |
| ASFALFETIDA, cm. to fin. " | 1 8 | 2 12 | 0 13 | 2 10 |
| BENJAMIN, 1st & 2nd | | | | |
| Sumatra 1st & 2nd | 21 0 | 70 0 | 20 0 | 70 0 |
| 3rd " | 6 10 | 15 10 | 6 10 | 17 0 |
| COPAL, Angola red | 2 10 | 3 12½ | 3 0 | 0 0 |
| Beuguela " | 3 5 | 6 0 | 6 0 | 6 15 |
| Sierra Leone, per lb. | 3 0 | 3 10 | 4 0 | 5 0 |
| Manilla per cwt. | 0 7½ | 0 10 | 0 6½ | 0 9 |
| DAMMAR, pale " | 17 0 | 30 0 | 17 6 | 24 0 |
| Singapore " | 80 0 | 95 0 | 75 0 | 80 0 |
| EUPHORBUM " | 75 0 | 99 0 | 60 0 | 70 0 |
| GALBANUM per lb. | 0 0 | 0 0 | 9 10 | 15 0 |
| GAMBOGE, pckd. pipe per cwt. | 0 0 | 0 0 | 0 4 | 1 0 |
| GUAIACUM per lb. | 230 0 | 270 0 | 190 0 | 250 0 |
| KINO per cwt. | 1 0 | 2 9 | 1 0 | 2 5 |
| KOWRIE, sorts " | 60 0 | 99 0 | 64 0 | 89 0 |
| selected " | 40 0 | 55 0 | 37 0 | 48 0 |
| MASTIC, picked per lb. | 110 0 | 180 0 | 100 0 | 170 0 |
| MYRRH, gd. & fine per cwt. | 2 6 | 3 6 | 3 0 | 3 8 |
| ord. to fair. " | 155 0 | 250 0 | 150 0 | 200 0 |
| OLIBANUM, p. drop | 60 0 | 150 0 | 65 0 | 150 0 |
| amber & ylw. " | 75 0 | 80 0 | 47 0 | 55 0 |
| garblings " | 20 0 | 72 0 | 36 0 | 46 0 |
| SENEGAL " | 73 0 | 84 0 | 19 0 | 28 0 |
| SANDARAC " | 50 0 | 60 0 | 62 6 | 100 0 |
| SHELLAC, Orange. " | 55 0 | 88 0 | 62 0 | 90 0 |
| Liver " | 80 0 | 92 0 | 70 0 | 90 0 |
| THUS " | 70 0 | 83 0 | 68 0 | 82 0 |
| TRAGACANTH, leaf | | | | |
| in sorts " | 0 0 | 0 0 | 20 0 | 21 6 |
| OILS. | £ s. | £ s. | £ s. | £ s. |
| SEAL, pale per tun | 26 0 | 0 0 | 32 0 | 0 0 |
| yellow to tinged | 23 10 | 25 0 | 28 0 | 31 0 |
| brown " | 22 0 | 23 0 | 26 0 | 27 0 |
| SPEARMINT " | 54 0 | 0 0 | 67 0 | 0 0 |
| BODY " | 0 0 | 0 0 | 0 0 | 0 0 |
| COD " | 27 0 | 28 0 | 30 0 | 0 0 |

| | 1879. | | 1878. | |
|---------------------------------|-------|-------|-------|-------|
| Oils, continued:— | £ s. | £ s. | £ s. | £ s. |
| WHALE, South Sea, pale, per tun | 26 0 | 0 0 | 32 0 | 0 0 |
| yellow, " " | 23 10 | 25 0 | 31 0 | 0 0 |
| brown, " " | 18 0 | 20 0 | 28 0 | 29 0 |
| East India, Fish, " " | 0 0 | 0 0 | 0 0 | 0 0 |
| OLIVE, Galipoli per ton | 0 0 | 0 0 | 0 0 | 0 0 |
| Gioja " | 0 0 | 0 0 | 0 0 | 0 0 |
| Levant " | 41 0 | 41 0 | 0 0 | 0 0 |
| Mogador " | 0 0 | 0 0 | 43 0 | 0 0 |
| Spanish " | 47 0 | 0 0 | 49 0 | 51 0 |
| Sicily " | 44 10 | 0 0 | 0 0 | 0 0 |
| COCOA-NUT, Cochin. " | 49 0 | 48 0 | 58 0 | 0 0 |
| Ceylon " | 33 10 | 37 10 | 42 0 | 42 10 |
| Mauritius " | 37 10 | 37 15 | 41 5 | 0 0 |
| GROUND-NUT AND GINGELLY: | | | | |
| Bombay " | 0 0 | 0 0 | 0 0 | 0 0 |
| Madras " | 0 0 | 0 0 | 0 0 | 0 0 |
| PALM, fine. " | 31 10 | 32 0 | 37 0 | 0 0 |
| LINSEED " | 28 0 | 0 0 | 29 0 | 0 0 |
| RAPESEED, English, pale | 39 15 | 31 0 | 34 15 | 0 0 |
| brown " | 28 15 | 29 0 | 32 15 | 0 0 |
| Foreign, pale | 0 0 | 0 0 | 0 0 | 0 0 |
| brown " | 0 0 | 0 0 | 0 0 | 9 0 |
| COTTONSEED " | 27 10 | 28 10 | 31 0 | 31 10 |
| LARD " | 33 10 | 35 10 | 42 0 | 44 0 |
| TALLOW " | 39 0 | 35 0 | 30 0 | 31 0 |
| TURPENTINE, American, cks. | 21 4½ | 0 0 | 23 0 | 0 0 |
| French " | 0 0 | 0 0 | 0 0 | 0 0 |
| PETROLEUM, Crude " | 0 0 | 0 0 | 0 0 | 0 0 |
| refined, per gall. | 0 6 | 0 0 | 0 9½ | 0 0 |
| Spirit " | 0 6½ | 0 7 | 0 6½ | 0 8 |
| SEEDS. | | | | |
| CANARY per qr. | 45 0 | 55 0 | 47 0 | 53 0 |
| CARAWAY, English per cwt. | 0 0 | 0 0 | 43 0 | 45 0 |
| Germans, &c. " | 0 0 | 0 0 | 48 0 | 49 0 |
| CORIANDE per qr. | 14 9 | 18 0 | 18 0 | 23 0 |
| HEMP " | 39 0 | 44 0 | 0 0 | 0 0 |
| LINSEED English | 60 0 | 68 0 | 0 0 | 0 0 |
| Black Sea & Azof | 51 0 | 0 0 | 0 0 | 0 0 |
| Calcutta " | 51 6 | 0 0 | 51 0 | 0 0 |
| Bombay " | 52 6 | 0 0 | 51 0 | 0 0 |
| St. Petersburg. " | 47 6 | 48 6 | 0 0 | 0 0 |
| Mustard, brown, per bush. | 12 0 | 16 0 | 0 0 | 0 0 |
| white. " | 10 0 | 15 0 | 13 0 | 16 0 |
| POPPY, East India, per qr. | 51 6 | 0 0 | 51 6 | 52 0 |
| SPICES. | | | | |
| CASSIA LIGNEA per cwt. | 38 0 | 45 0 | 41 0 | 52 0 |
| Vera " | 22 0 | 35 0 | 21 0 | 36 0 |
| Buds " | 57 0 | 58 0 | 54 0 | 55 0 |
| CINNAMON, Ceylon: | | | | |
| 1st quality per lb. | 1 0 | 3 4 | 1 8 | 2 10 |
| 2nd do. " | 0 11 | 2 4 | 1 6 | 2 5 |
| 3rd do. " | 0 10 | 1 6 | 1 4 | 1 9 |
| Tellicherry " | 1 8 | 2 0 | 0 0 | 0 0 |
| Calips " | 0 2½ | 0 5 | 0 3 | 0 6 |
| CLOVES, Penang " | 1 8 | 1 10 | 1 8 | 1 11 |
| Amboyua " | 1 5 | 1 6 | 1 5 | 1 7 |
| Zanzibar " | 1 4 | 1 5 | 1 2 | 1 4 |
| GINGER, Jam., fine per cwt. | 90 0 | 200 0 | 90 0 | 202 6 |
| Ord. to good " | 50 0 | 80 0 | 52 0 | 89 0 |
| African " | 18 0 | 19 0 | 21 0 | 22 6 |
| Bengal " | 16 0 | 0 0 | 19 0 | 20 0 |
| Malabar " | 0 0 | 0 0 | 0 0 | 0 0 |
| Cochin " | 33 0 | 110 0 | 47 0 | 125 0 |
| PEPPER, Bk. Malabar, per lb. | 0 3½ | 0 4½ | 0 4½ | 0 5½ |
| Singapore " | 0 3½ | 0 3½ | 0 3½ | 0 3½ |
| White Tellicherry " | 1 0 | 2 0 | 0 10 | 1 4 |
| Cayenne " | 1 0 | 0 6 | 1 4 | 3 0 |
| MACE, 1st quality " | 1 9 | 3 0 | 1 10 | 2 8 |
| 2nd and inferior " | 1 0 | 1 8 | 1 0 | 1 9 |
| NUTMEGS, 78 to 60 to lb. | 3 8 | 4 9 | 3 11 | 4 6 |
| 90 to 80 " | 3 0 | 3 7 | 3 0 | 3 10 |
| 132 to 95 " | 1 11 | 2 11 | 1 10 | 2 19 |
| PIMENTA " | 0 5 | 0 0 | 0 4½ | 0 4½ |
| VARIOUS PRODUCTS. | | | | |
| COCHINEAL— | | | | |
| Honduras, black per lb. | 0 0 | 0 0 | 2 3 | 2 7 |
| silver " | 0 0 | 0 0 | 2 4 | 2 5 |
| pasty " | 0 0 | 0 0 | 2 3 | 0 0 |
| Mexican, black " | 2 3 | 2 4 | 2 3 | 2 4 |
| silver " | 2 2 | 0 0 | 2 2 | 2 3 |
| Teneriffe, black " | 2 3 | 2 11 | 2 4 | 0 0 |
| silver " | 2 3 | 2 4 | 2 4 | 2 5 |
| SOAP, Castile per cwt. | 25 0 | 43 0 | 34 0 | 34 10 |
| SOY, China per gall. | 1 11 | 2 0 | 2 7 | 0 0 |
| TEIKRA JAPONICA— | | | | |
| Gambier per cwt. | 15 6 | 0 0 | 17 6 | 18 0 |
| Free cubes " | 24 0 | 25 6 | 25 0 | 27 0 |
| Cutch " | 24 0 | 26 0 | 23 0 | 25 0 |
| WAX, BEES, English | £0 0 | £0 0 | £0 0 | 0 0 |
| Jamaica " | 6 15 | 7 15 | 7 10 | 7 15 |
| East India " | 5 10 | 6 10 | 7 5 | 7 15 |
| VEGETABLE, Japan | 3 2 | 3 5 | 2 14 | 2 16 |
| WOOD, DYE, Bar. per tun | 3 5 | 3 10 | 2 10 | 3 0 |
| Brazil " | 12 0 | 45 0 | 14 0 | 20 0 |
| Cam. " | 23 0 | 23 0 | 22 0 | 34 0 |
| Fustic, Cuba " | 0 0 | 0 0 | 8 0 | 8 10 |
| Jamaica " | 5 11 | 6 0 | 5 0 | 5 10 |
| Log wood, Campeachy, .. | 7 10 | 8 0 | 8 5 | 8 15 |
| Honduras " | 6 10 | 7 0 | 6 10 | 6 15 |
| St. Domingo " | 5 5 | 5 15 | 5 0 | 5 15 |
| Jamaica " | 5 10 | 5 15 | 4 10 | 5 0 |
| LIMA, first pile " | 10 5 | 11 0 | 8 10 | 9 0 |
| RED SANDERS " | 6 10 | 0 0 | 6 0 | 0 0 |

Pharmacy.

CANTHARIDIN FROM THE POTATO BUG.

It appears from some experiments detailed in the *American Journal of Pharmacy* for June, that the fresh powder of the potato bug yields about 1½ per cent. of pure cantharidin. This is a large product, and no doubt these pests will be increasingly used as a cheap source of this valuable remedy.

REDUCED IRON.

ACCORDING to a communication made by M. Moissun to the Academy of Sciences of Paris the reduced iron found in the pharmacies is rarely pure. Once in place of iron he was supplied with oxide of copper. Most of the samples examined by M. Moissun contained only 70 to 90 per cent. of iron, and a great number contained sulphur and arsenic.—*Practicien*.

ARTIFICIAL KOUMISS.

The following process is given by a correspondent of the *Pharm. Zeitung*:—

| | |
|---|----------------|
| Condensed milk | 100 grammes |
| Lactic acid | 1 gramme |
| Citric acid | 5 centigrammes |
| Good rum or brandy | 15 grammes |
| Diluted with water to 1,000 or 1,500 grammes, and charged with carbonic acid gas. | |

After standing in a warm room for a few days the mixture will commence to foam.

A DIFFICULT EMULSION.

In a paper recently read before the Chemists' Assistants' Association by Mr. Cardwell on "Emulsions," he mentioned a prescription containing ol. morrhue, ferrum tart., pot. carb., and aqua, to be made into an emulsion. He stated that it is frequently prescribed by a well-known surgeon on the staff of one of the best hospitals in London, and confessed his inability to blend it, even after a week's shaking. Respecting this, Mr. Walter Bangs, dispenser at Guy's Hospital, explains in the *Monthly Magazine of Pharmacy* that the preparation is known at Guy's Hospital as mist. ol. morrhue c. ferro, and eight gallons of it are frequently dispensed there in a day. As an emulsion it is a very good one, and requires very little trouble to prepare. He makes two gallons at a time by putting the ferri tart. into a jug, pouring a small quantity of boiling water upon it, stirring with a stick until it is dissolved, then adding the pot. carb. and the remainder of the water, and, lastly, the ol. morrhue, constantly stirring. There is no difficulty whatever in blending the ingredients.

A NEW PREPARATION OF QUININE SOLUBLE IN WATER.

In the *Centralblatt f. d. Med. Wiss.*, June 14 (quoted in the *Medical Times*), Dr. Jaffe, of the Hamburg General Hospital, reports the results of the trials which he has made of a new preparation of quinine termed *quinia bimuriatica carbamidata*, formed by Drygin from a combination of twenty parts of muriate of quinia, twelve of muriatic acid and three parts of urea. The resulting salt is soluble in equal parts of water, and is therefore eminently suitable for the administration of large doses of quinine by the hypodermic method. The trials that have been made of it at Hamburg have proved so successful that it is highly desirable it should be more widely known. A 50 per cent. solution has always been employed, so that a Pravaz syringe full (holding one gramme) will contain a third of a gramme of the salt. The quantity injected varied from a half to three syringes full. The local irritation consequent on the injection was in most cases very slight, and at most consisted in a circumscribed burning pain (which was soon relieved by cold Goulard water), without redness or swelling. Doses of a gramme produced in men scarcely any subjective sensations, and the noises in the ear complained of by women and children soon disap-

peared. The antifebrile effects were evident and certain, intermittents disappearing after the second or third injection. This form of administration seems especially indicated (1) in those sensitive persons who have an invincible objection to taking quinine by the mouth; (2) when gastric affections co-exist; (3) in children; and (4) in hospital and pauper practice, as a much smaller quantity of quinine is required than when it is administered internally.



PRICES OF PATENT MEDICINES.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—In your remarks on the patent medicine trade (which apply equally well to all proprietary articles) it is assumed that the makers are responsible for their goods being sold at cutting prices by the co-operative stores and many general dealers.

Allow me to ask in what way the manufacturers can control the retail rates of their preparations, other than by their present system of marking a rate which usually allows ample profit to the retailer?

It is well known to many that the factors (*i.e.* wholesale druggists and patent medicine vendors) have competed amongst themselves for chemists' and "stores" orders, ultimately allowing such large discounts that the stores can well afford to sell proprietary articles at about two-thirds the marked retail prices.

It is through the "wholesale" firms that most manufacturers of proprietary articles sell their preparations, and anyone seeking to develop a trade with druggists must of necessity do the greater part of it through wholesale houses, to whom he cannot dictate where and at what profits they must vend his products.

It seems to me that no manufacturer can possibly keep his goods out of "stores," whether he desire to do so or not; but I shall be glad to see the subject discussed in your columns.

Yours, &c.,
ORRERA.

THE SEAL OF THE PHARMACEUTICAL SOCIETY OF IRELAND.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Intending to use the design upon the seal used by the Pharmaceutical Society of Ireland for decorative purposes, my attention was drawn to the very few representations exhibited in the windows of the chemists' shops in Dublin, not one of which, I find, has been correctly painted in the proper heraldic colours; the positions of the cross, &c., on the seal being alone followed. Finding this error, I was induced to make an investigation of the origin of the seal, the result of which I shall presently show; but before doing so it may be well to state its origin.

The Pharmacy Act (Ireland), 1875, 38 & 39 Vic., clause 4, incorporating the Society grants to it a common seal, but for which no design was furnished.

A Committee of the Council was thereupon appointed for the purpose of deciding upon a suitable device; but no attempt appears to have been made to obtain from any competent authority one which was appropriate. However, in due course a design was arrived at. It is thus described in the "Regulations" of the Society:—"The Common Seal of the Society shall consist of a shield bearing a harp crowned, and resting on the centre of a St. Patrick's Cross, with the legend 'Seal of the Pharmaceutical Society of Ireland, MDCCCLXXV.'" It may be observed here that the parts are described in the reverse order to that in use by heralds, who invariably commence with the field or ground.

Pursuant to the 16th section of the Act, this rule was submitted for the approval of the Lord Lieutenant and the Privy Council, and being confirmed by them became law.

The seal is in low relief, and the heraldic colours are not indicated by the usual method, *viz.*, lines drawn in varied direction to denote a particular colour. The cross divides the seal perpendicularly and transversely, and upon the point of junction of the arms is a shield bearing a harp and crown. This if blazoned in colours would be field, silver; cross, red; crown, gold; harp, gold with strings silver.

Now it happens that the cross of St. Patrick is, heraldically speaking, not a cross, but a saltire—*i.e.*, a diagonal cross—and is familiar as one of the two diagonals in the flag of the Union Jack,* it being the red upon the

* Curiously enough, this flag is incorrectly shown on the shield of Britannia on our national bronze money.

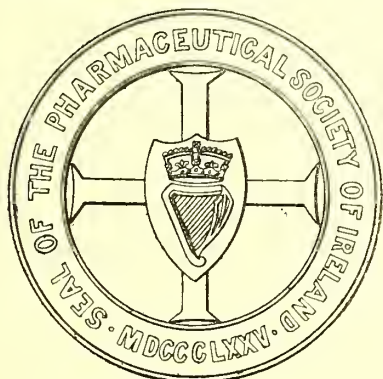
white St. Andrew's cross. The Knights of St. Patrick also use it as part of the design of their star and badge; heraldic works agree in describing it as a saltire, and I have the authority of Sir Bernard Burke, Ulster King-at-Arms, for saying that it is a "saltire gules"—in other words, a red diagonal cross. Now, the cross upon the seal is not a saltire in any sense, and is, therefore, not a St. Patrick's cross.

The Society, having received the above referred to sanction for a design bearing a St. Patrick's cross, has, strange to say, adopted a seal without one; therefore, that now used by the Society is not the proper seal at all; nor has it had at any time the legal one. Any documents or papers, therefore, stamped with it have upon them impressions that cannot be made to coincide with the description referred to as approved by the Privy Council, and, in my opinion, have very little chance of standing in a court of law if a point of objection were raised. With this possibility, however, I have nothing to do. To me the matter is simply one of personal interest, and it may also prove to be so to some of the readers of the CHEMIST AND DRUGGIST.

I am, sir, yours,

WILLIAM N. ALLEN, JUN.

[The subjoined drawings illustrate Mr. Allen's remarks; the first is a representation of the seal as actually used by the Pharmaceutical Society of Ireland; the second, which has been engraved from Mr. Allen's sketch, represents the seal as described in the regulations.]



APOTHECARIES v. DRUGGISTS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—In your number of July 15 you dismiss this question as one in which legal victory rests undoubtedly with the prosecution, but, notwithstanding the advice of "the lawyer," I do not believe the argument for the defence is yet exhausted. I need not repeat what is stated in the articles you republish as to the meaning of the disqualifying provision in the Act of 1815, but there is another clause in that statute which does not appear to have yet attracted any attention. The clause in question provides that anyone who had practised as an apothecary before the passing of the Act might continue so to practise without acquiring the new qualification. This clause appears to constitute a *reductio ad absurdum* for the decision in the Birmingham County Court. Since it has been clearly proved—and is, indeed, so well known as to be beyond the necessity of formal evidence—that all druggists were in the habit of recommending medicine over their counters before the Act passed, and it is now declared that such recommending is equivalent to practising as an apothecary, it follows, according to the legal judgment, that the Act endowed every druggist in the kingdom with a vested right to practise as an apothecary; and, consequently, opened wider than ever the floodgates it was intended to close. This conclusion

is so manifestly ridiculous that no confidence can be placed in a judgment which causes it to arise.

When the authors of the enactment said anyone who had previously engaged in practice as an apothecary might continue so to do, without any examination or certificate, they could little have dreamt that the forensic Solomons of these days would assume that they considered prescribing over the counter the same thing as practising as an apothecary.

Recommending this part of the case to the consideration of the trade,

I am, sir, your obedient servant,

JAMES FREEMAN.

Birmingham, July 31, 1879.

[The clause referred to is the 29th of the Apothecaries Act. It is purely personal, and could only be of advantage to any who could prove that *he himself* had practised as an apothecary before August 1, 1815.—Ed C. & D.]

PREScribing.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—The minds of pharmacists and others being just now considerably exercised upon the subject of prescribing, the following, taken from a copy of the Eton Latin Grammar, by Wheeler, may prove of interest:—

"That monks, &c., were originally physicians, accounts for the following law, whereby physicians are under the authority of the Bishops of the diocese:—

"No person within London, or seven miles thereof, shall practise as a physician or surgeon, without licence from the Bishop of London or Dean of St. Paul's, who are to call to their assistance four doctors of physic on examination of the persons before granted; and none could practise physic in the country without licence from the Bishop of the diocese, on pain of forfeiting 5*l.* per month."—See 3 Henry VIII. c. ii.; and 7 Jac. I. *In re Bonham*.

"Apothecaries taking upon them to administer physic without the advice of a doctor have been adjudged to practise physic within the statutes, the proper business of an apothecary being 'to prepare the prescriptions of the doctors.' The practice of physic was said to consist in judging of the disease and constitution of the patient, and of the proper remedy for the distemper, and in directing (by prescription) the application of the remedy; and so it was resolved, *even where no fee was given to the apothecary*.—2 Salk 451. But this judgment was afterwards reversed by the House of Lords.—Med. Cas. 44.

"It has also been holden that if a person not duly authorised to be a physician or surgeon undertakes a cure, and the patient dies under his hands, he is guilty of felony, but is not excluded from the benefit of clergy.—1 Hawk. P. C. 87.

"It is the duty of the apothecary to write in English on the label attached to the medicine the directions given by the physician in his prescription."

Yours faithfully,

S. M. DALTON.

24 Pall Mall, Sandhurst, Victoria, Australia, June 11, 1879.

DR. D'UNGER'S BARK CURE.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

DEAR SIR,—In your editorial comments upon my fault-finding with a class of people who are defrauding the suffering by representing certain cinchona preparations as mine you do me great injustice, and in this wise. You say that my warning to the public "casts a little shade over the halo of pure philanthropy which at first enveloped the discoverer." Now the fact is, my formula—with a full account of my manner of mixing the preparation, with a distinct description of the bark-red Loxa variety *vera* of Weddell—was published over eighteen months ago in both the *New York Sun* and *Chicago Tribune*; and in that publication I distinctly stated that any druggist could put up the remedy provided he was careful to select the real Loxa bark as I did. An error crept into the statement which made it appear as if but 1 pint of dilute alcohol was needed, an error so palpable that men of ordinary intelligence would at once detect it. What I really said was that I procured a pint of tincture from a pound of the bark, afterwards evaporating the same to half a pint, thus giving 2 grains for 1, or a double fluid extract. At present I am using 3 lbs. of the bark to the pint. But none of my druggist friends have followed this prescription; but, in many instances, in your good City of London they have sold the ordinary tinct. cinchona (6 oz. common bark to the quart)* and at a guinea a pound at that. The highest strength I have heard of as being sold was the ordinary fluid extract, grain for grain, and furnished by a firm in Birmingham.

The discovery certainly has not been profitable to me, giving me "piles" of work, gratis. It never was my intention to manufacture the remedy, but I have been driven to it to save myself. I thought to do the world a service by making my discovery known, but the world's people (some of them) have proved ungrateful, heaping upon me abuse instead of thanks.

* This is the U. S. P. formula.

As you are aware, there are hundreds of varieties of the cinchona, of all qualities and colours; and can you blame me for trying to save my professional reputation, which the vendors of cheap and spurious barks and tinctures—altogether different in their composition from what I am so successfully using—are injuring? Tinctures have been sold by druggists in London, Liverpool, Edinburgh, Belfast—samples of which are in my possession—at 20s. per lb., worthless stuff, made from $\frac{1}{2}$ lb. of bark to the pint, the bark worth 9d. There are druggists, plenty of them, everywhere who are above deception of this kind; but there are many who are ready to resort to anything to make the odd penny. Indeed, the lives of many of them are but panoramas of lies.

The three leading wholesale drug houses in Chicago—Lord, Stoutenberg & Co., Talman & King, and Morrison, Plummer & Co.—get the genuine preparation from me, and why? Simply because I make it from purer and fresher bark than they can conveniently get hold of.

But enough. My object in writing what I did for your journal was not to denounce honourable druggists, but that class who are using my name as a means of deluding the people. Only struck birds flutter.

Respectfully, &c.,

R. D'UNGER, M.D.

Palmer House, Chicago, July 29, 1879.

Anonymous Correspondents are respectfully informed that we cannot undertake to give any attention whatever to their communications. We never publish names if a *nom de plume* or initials are given, but must ask for so much confidence on the part of our correspondents as is implied by the addition of their name and address.

A correspondent favours us with the following:—

"The rough and obscured surface inside of scidlitz powder tumblers, caused by a frequent use of the glass rod, may be prevented by slipping half an inch of white indiarubber tubing over the end of the rod; an addition which, besides being scarcely perceptible, acts as a protection against a too violent contact with the marble slab."

1/16. An Ethical Query.—T. Y. puts the following case:—A boy brings to his shop a prescription including certain items not generally comprehensible, such as "Glyc. et acbl" and "Pa opii et grey." The definite formulas for these compounds he has reason to believe are kept at another shop in the town, in which the author of the prescription is interested. Probably the prescription has been brought to "T. Y." in mistake. What should he do? Send the boy on to the unfair rival, and thus play into the hands of the latter by convincing the customer of his own inferior ability, or make up the prescription to the best of his judgment? The latter course was adopted by our correspondent, and the medicine was sent back as wrong, with a demand that the money paid for it should be returned.

25/45. J. F. M.—There is no legal objection to a chemist publishing a pamphlet on the treatment of any disease. We suppose that cannot be tortured into an infringement of the Apothecaries Act. The only advantage of registration of such a pamphlet at Stationers' Hall is that you are thereby enabled to sue for infringement of copyright thereof. If your pamphlet recommends your medicine, such medicine will require a stamp, and can only be sold as a patent medicine.

20/47. Assistant.—Tie Dououreux Pills.—The following is the formula for "Meglin's Pills," which have a special reputation in Germany for the cure of tie.

Ext. hyoseyami
Zinci oxyd. 5â 3ij.

M. ft. pil. 40. One to be taken every night and morning, and the dose to be gradually increased to 20 or 30 pills a day. All treatment of tie dououreux should be preceded by an aperient medicine.

26/45. E. R. G.—Infant's Food.—See answer to "R. H." last month.

50/47.—Disjenser.—We think the requirements of your client would be best met by a book called "Medical Information and Advice," written by the late Dr. Warburton Begbie, and published by Nelsons at 2s. 6d. It was reviewed in this journal in October, 1876. We may also recommend a 6d. pamphlet by Mr. Alfred Smece called "The House Surgeon," published by the Accident Insurance Company.

71/47. Lemons.—Ripe Lemons may be preserved for some time by painting them with shellac varnish; or by dipping them in melted paraffin, being careful to handle them gently when cold, to leave the skin of paraffin unbroken. Botany of the Bible.—A work on Bible plants, by Mr. John Smith, ex-curator of the Royal Gardens at Kew, was published last year by Bogue, at 5s. Bow's Liniment.—We do not know it.

4/48. A Question for Aerated Water Makers.—Suburb writes:—"Can you suggest a reason for ginger-ale or lemonade turning sometimes milky, sometimes blackish, when mixed with whisky or brandy? The most likely would be that either contained iron, striking colour with tannic acid in the spirit, which might be got from the casks. In that case it would be all alike, but it is only in very few instances it occurs. Perhaps you or some of your correspondents may have had attention directed to the same before." Perhaps occasional impurity of the spirit might account

for the milkiness, by the separation of some fusel oil. Insufficient attention to the perfect cleanliness of the bottles, soundness of the corks, or purity of the water supply, might be suggested to account for the occasional presence of iron. Any other explanations will oblige.

29/35. Cluck.—Pill-coating.—You can get a very good pearl-coating by using French chalk on pills just moistened with mucilage, especially if you use Cartner's Pill-coater, which you will find advertised elsewhere in this journal.

41/45. A. D.—Extract of Meat was first prepared by Liebig in 1847. The Liebig's Extract of Meat Company was formed in 1866, but the preparation had been sold in England in regular commerce previous to that date. Messrs. Harvey & Reynolds, of Leeds, have made and sold it since 1865, and, we believe, that still earlier Mr. Van Abbott was selling a preparation made in South America, with Liebig's sanction, and imported into this country from Antwerp. In an action brought subsequently by the Liebig Company against Tooth, it was decided that the publication of the process by the English translation of "Liebig and Kopp's Annual Reports on the Progress of Chemistry" had destroyed any exclusive right on the part of the discoverer.

45/46. Otto.—Otto of Roso Original Bottles.—Otto of rose is now generally imported in kankumas, which are flattened round tin bottles, sewed up in thick white woollen cloth, holding 1 to 10 lbs., and bearing a calico label inscribed in Turkish characters. The label should indicate the tare of the bottle in Turkish weights, the rough rule for calculating which is to take 10 drachms as equal to 1 oz. English. The small gilt white glass bottles, which are commonly the only original bottles known to retail druggists, are imported from Germany into Constantinople, and are there filled by the merchants. These also should bear a calico label, indicating the tare in Turkish weights. The epithets, "Virgin" and "Optiss," are of English origin; they are quite unknown in Turkey, and seem to have no equivalents there. They are probably applied arbitrarily, according to the vendor's conscience, or his belief in the purity of his samples. All gilt bottles of otto may be treated alike.

45/46. Bitters.—For formulae of bitters see CHEMIST AND DRUGGIST for 1878, pages 9, 58, 67, 71, 95, 143, 196, 240, 385. The following is an old preparation still official in the German Pharmacopœia:—Orange berries, centaury, and gentian root, of each 2 oz.; zedoary root, 1 oz.; alcohol (66 o. p.), 35 oz.

48/36. Asphalt Solvent.—"Vera Solidago would be glad to know of an odourless, quick-drying, but not oily solvent of asphaltum." Quick-drying, we suppose, implies that the solvent must be volatile; and we never yet heard of a liquid which was at once highly volatile and odourless. We think the two characters cannot go together. Perhaps some reader can oblige.

46/41. Liquid Dentrifices.—B. writes: "I tried to make some of the saponaceous tooth-wash, as recommended to 'A. F. C.' in last CHEMIST AND DRUGGIST, page 310, col. 1, and was surprised to find that when I mixed the alcohol with the soap and water it immediately solidified. Can anyone tell me the right way to prepare it?" "B." does not say what soap he used; if he tries again with pure potash soap, *sapo mollis* P. B., his experience will probably be different.

Another somewhat similar formula was given twice in our last volume pages 136 and 328. The following is given as a formula for

Quillaya Tooth Wash.

| | | | | | | |
|-------------------|----|----|----|----|----|-----------|
| Star-anise seed | .. | .. | .. | .. | .. | 1 oz. |
| Quillaya bark | .. | .. | .. | .. | .. | 3 ozs. |
| Cloves | .. | .. | .. | .. | .. | 2 drachms |
| Cinnamon | .. | .. | .. | .. | .. | 2 drachms |
| Oil of peppermint | .. | .. | .. | .. | .. | 12 minims |
| Gnibear | .. | .. | .. | .. | .. | 1 drachm |
| Diluted alcohol | .. | .. | .. | .. | .. | 28 ozs. |

Exhaust by maceration or displacement, and filter.

17/49. W. T. M.—Our analytical reports of various hair restorers appeared in February, 1869. That number has long been out of print, but might perhaps be obtained by advertising in our Exchange Column.

46/9. Thymol.—C. E. Atkins.—A. W. Gerrard finds that the strongest available aqueous solution of thymol is 1 in 1,000. Four grains of it dissolved in a fluid ounce of rectified spirit yield an alcoholic solution miscible with water without becoming turbid. One grain dissolved in 2 fluid drachms of heated glycerine remains clear on cooling, the solution becoming turbid on the addition of water, until 4 volumes of the latter have been added, when it is clear again. Dr. L. Lewin finds that the addition of 1 1/2 per cent. of thymol is an effective antiseptic. See "Year-book of Pharmacy," 1878, index, and THE CHEMIST AND DRUGGIST, 1878, p. 111. No formula for thymol soap has yet been published, but thymol dissolves readily in heated oils, and a thymolated oil might be saponified. Make it any strength you like, 1 in 1,000 or 7 grains to a pound will answer as well as any other.

31/3. D.—Stoneware might answer your purpose. If so apply to Patent Plumbago Crucible Company, Batterssea. Or saturate the corks with melted paraffin, which will effectually preserve them. This can be done tolerably cheaply.

ZINCI OXYD. PUR.

(HARRIS'S).

GUARANTEED TO ANSWER ALL THE B.P. TESTS,
In 4, 7, 14 & 28lb. Boxes, Boxes Free. Also in 1lb. & 2lb. Parcels, 1s. 1b.

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" Tidman & Son | " Boileau & Boyd, Dublin. | " Woolley, Sons & Co., Manchester.

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We ask
reference to
the announcement of
MESSRS. W. R. WARNER
& Co., on p. 67. Detailed Price
Lists of the Formulae in stock are now
ready, and will be supplied on application.
The advantages claimed for WARNER'S PILLS
are that they are uniformly and carefully prepared,
thoroughly soluble, and in every way satisfactory.

Warner's SUGAR COATED PILLS.

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Lavender Water.

The attention of the Trade is asked to **BERDOE'S
LAVENDER WATER**, of Triple Strength.
This article has proved itself worthy of appreciation,
and is really well prepared and in good condition. Price per Large Bottle,
4s. 9d.; half ditto, 2s. 5d.
(Bottles contain about, or more than, twenty fluid ounces.)



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VITAL ENERGY, it is well known, depends upon the normal functions of the nerve-electric fluid governing the whole economy; any deficiency thereof in the system manifests itself, according to the locality, by a variety of troublesome ailments, such as

| | | |
|------------------|--------------|----------------------|
| Indigestion | Asthma | Local Debility |
| Liver Complaints | Bronchitis | General Debility |
| Neuralgia | Paralysis | Female Complaints |
| Sciatica | Epilepsy | Mental and |
| Deafness | Rheumatism | Physical Weakness |
| Writer's Cramp | Gout | Functional Disorders |
| Loss of Voice | Constipation | &c., &c. |

This is no conjecture, but an established scientific fact, and it must be admitted that **PULVERMACHER'S GALVANIC CHAIN-BANDS**, by supplying this electrical deficiency, constitutes Nature's most congenial curative in the ailments referred to, embodying a host of remedies in one

Thirty years' successful experience has proved the marvellous remedial powers of these appliances, even in cases defying ordinary treatment.

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THE CONTINUOUS VOLTA-ELECTRIC CURRENTS, rendered most conveniently self-applicable by recent improvements of these Chain-Bands, although applied externally, penetrate to the innermost organs, promoting digestion, circulation, and nutrition, and perform their recuperative and restorative work in a silent, natural way, devoid of the costliness, uncertainty and inconvenience of ordinary treatment, or of any unpleasant sensation or shocks, counter-irritation, &c.

Even a Five Shilling Band of the minimum electric power evinces its genuineness by deflecting a telegraphic needle at many miles' distance, whilst those of superior price and power produce all the physical, chemical, and physiological phenomena possessing the famous curative powers of the voltaic battery, enhanced by their great portability.

Mr. **PULVERMACHER** refrains from advancing statements of his own in favour of his Medico Galvanic Appliances, but confines himself mainly to quotations from the opinions of competent medical and scientific authorities, including Sir C. Locock, Bart., M.D., F.R.C.S.; Sir HENRY HOLLAND, Bart., M.D., F.R.C.S., and F.R.S.; Sir J. R. MARTIN, Bart., C.B., F.R.C.S., F.S.A., and F.R.S.; Sir W. FERGUSSON, Bart., M.D. F.R.S., F.R.C.S., &c., reproduced in Pamphlet, post free.

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Concentrated IN VACUO to a
Strength double that of the Succus Taraxaci of the Pharmacopœia.

The process by which this preparation is manufactured entirely excludes the injurious effects of Heat, Oxidation, and Fermentation. The active constituents remain quite uninjured; and, owing to the great care with which any incipient change is guarded against during the manufacture, this preparation **KEEPS PERFECTLY**, whilst the expressed Juice of the British Pharmacopœia, although containing 25 per cent. of Rectified Spirit, quickly becomes mawkishly sweet, through the conversion of its active constituents into inert saccharine matter.

Price 4/ per lb. W. Qts. 3/10

FIELD'S LIQUOR CINCIONÆ CORDIFOLIÆ. LIQUOR CINCIONÆ RUB.

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These well-known preparations contain the whole of the active ingredients of Bark, and are manufactured with great care by a process specially devised for that purpose. They are made from the best Bark, and will be found a great desideratum to Druggists and Medical Men, as they furnish a ready means of at once preparing Decoctions and Infusions quite equal to those made from fresh Bark.

Price 10/ per lb.

INF. GENTIANÆ CO. CONC.

1 to 7.

Made with fresh Lemon Peel, as directed in the Pharmacopœia. Unequalled for use in Pick-me-Ups.

1/6 per lb.

INF. ROSÆ ACID. CONC.

1 to 7.

This preparation, unlike those generally sold, will keep perfectly for any length of time without gelatinising. There is nothing added, the difference being due to the mode of manufacture.

The odour is magnificent, and it is, when diluted, *superior* to the fresh Infusion.

It is also especially useful as a flavouring and colouring agent.

Price 2/6 per lb.

EXT. SARSÆ LIQ.

(Field's.)

This preparation is manufactured from the very best Jamaica Sarsaparilla, and is so prepared and purified from Starch, Mucilage, and other fermentable matter, that it *may be kept for any length of time without formation of a deposit.*

One part of this preparation is equal to two of that ordinarily sold, and it is a true exponent of the virtues of Jamaica Sarsaparilla in its best and most active condition.

This preparation is specially recommended by Dr. EDWARDS, Havelock House, Cheltenham, by whom it has been well tested for many years. 12/ per lb.

DEC. SARSÆ CO. CONC.

1 to 7.

Does not Deposit on keeping. 4/ per lb.

DEC. ALOES CO. CONC.

1 to 3.

Keeps well without formation of Deposit. 4/6 per lb.

Can be obtained of all Wholesale Houses, or direct from the Manufacturers,

CLEAVER & CO.

(Late J. J. FIELD),

Wholesale Pharmaceutical Chemists,

PAULTON SQUARE, KING'S ROAD, CHELSEA.

SPECIALTE:—

Concentrated Infusions, Liquid Extracts, &c., prepared in Vacuo from selected drugs only, at prices same as charged by all Wholesale Houses.



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Forest Rose Hawthorn Honey Suckle Magnolia Moss Rose White Rose
Guards' Bouquet Heliotrope Lily of the Valley May Blossom Spring Flowers Clove Pink

The above Perfumes at per 20 ozs. 11/-; 10 ozs., 5/7; 5 ozs., 2/10.

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| Fleur d'Oranger | Girl of the Period | Ladies' Pet | Oh! How Sweet | Something New | Wild Flowers |
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The above Perfumes at per 20 ozs. 9/6; 10 ozs., 4/10; 5 ozs., 2/6.

| | | | | | | | | |
|------------------------|-------------|------|----------------------------|-------------|------|-------------------------------|-------------|-----|
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| * Ess. Ambergris .. | " | 23/- | Ess. Wood Violet .. | " | 12/6 | Triple Orange Flower Water .. | " | 1/2 |
| Ess. Civet .. | " | 12/9 | Lavender Water (very fine) | " | 4/9 | | | |

* Specially subject to fluctuation.

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| Panelled Bottle Perfume, Glass-stoppered (3 oz.) to sell at 2/6 | | | 19/- | * D Round Bottle Perfume, with Sprinkle Serew-cap, to sell at 1/- | | | 8/- |
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| Plain " " " | | | 15/- | F Round Bottle "Lavender Water" (3 oz.) | | | 8/- |
| " " " | | | 1/6 | " " " | | | 1/- |
| " " " | | | 11/- | | | | 8/6 |

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HOPITAL—For Stomach Complaints, &c.

VICHY WATERS are pleasant to the taste, and may be drunk pure or mixed with Wine or Spirits.

CAUTION.—It is indispensable that all orders should state the name, WHICH IS ON THE CAPSULES, of the particular spring required.

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The Vichy Lozenges should be taken by those persons whose digestion is difficult, painful, or laborious.

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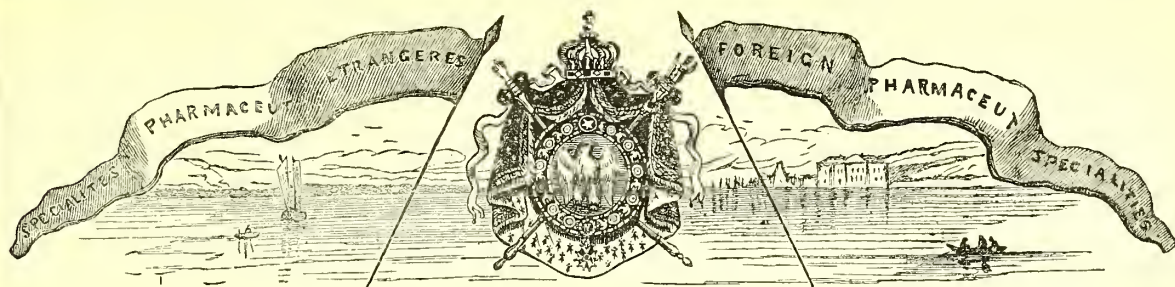
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| Retail | Per doz. | Retail | Per doz. | Retail | Per doz. | Retail | Per doz. |
|----------------------------------|----------|---------------------------------|----------|---------------------------------|----------|---------------------------------|----------|
| 6/0..Alcool de Menthe Ricques | ..42/ | 4/6..Capsules Raquin | ..30/ | 2/9..Grimault's Syrups | ..22/ | 6/0..Rabuteau's Elixir Ferrug. | ..48/ |
| 2/9.. Ditto ditto | ..21/ | 4/6.. Mathey Caylus | ..22/ | 2/3..Guyot's Goudron | ..17/ | 3/6.. " Sirop | ..27/ |
| 3/6..Auhergier's Syrup | ..27/ | 4/6..Chassaing's Wine | ..36/ | 11/..Laville's Gout Tincture | ..84/ | 4/6..Racahout | ..33/ |
| 1/9.. Pâte | ..13/ | 2/9.. Pills | ..25/ | 11/.. " Pills | ..84/ | 5/0..Reynal's Bougies | ..42/ |
| 6/6..Bay Rum | ..54/ | 4/6..Clin's Bromide Camph. Caps | 45/ | 2/3..Papier Fayard | ..13/ | 3/6..Ricord's Injection | ..24/ |
| 3/6.. Ditto | ..27/ | 4/6.. " Dragées | 45/ | 1/11 Ditto | ..6/6 | 4/6.. " Capsules | ..34/ |
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| 2/9.. Ditto | ..18/ | 3/0.. Ditto | ..26/ | 1/9.. " de Georgé | ..13/ | 2/9..Vallet's Pills | ..24/ |
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| 4/6..Bully's Vinegar | ..33/ | 2/6..Gayetty's Paper | ..18/ | 1/9.. " de Nafé | ..13/ | 3/6.. Ditto ditto | 30/ |
| 2/6.. Ditto | ..17/ | 2/3..Granules Arsen. Acid | ..15/ | 1/9.. " Regnauld | ..13/ | 3/0..Vichot's Trochisques | ..27/ |
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| 4/6.. " Matico | ..30/ | | | | | | |

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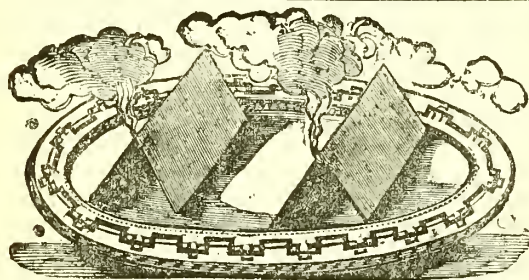
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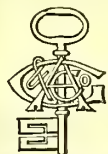
Messrs. FARNHAM & PADFIELD, Coleford, near Bath, say:—"Please send immediately, as, although we have other medicines (being patent medicine vendors), the people set them aside and inquire only for SEIGEL'S CURATIVE SYRUP."

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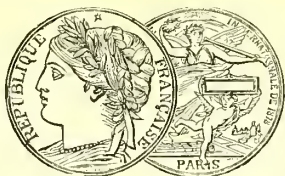
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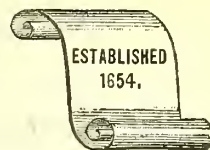
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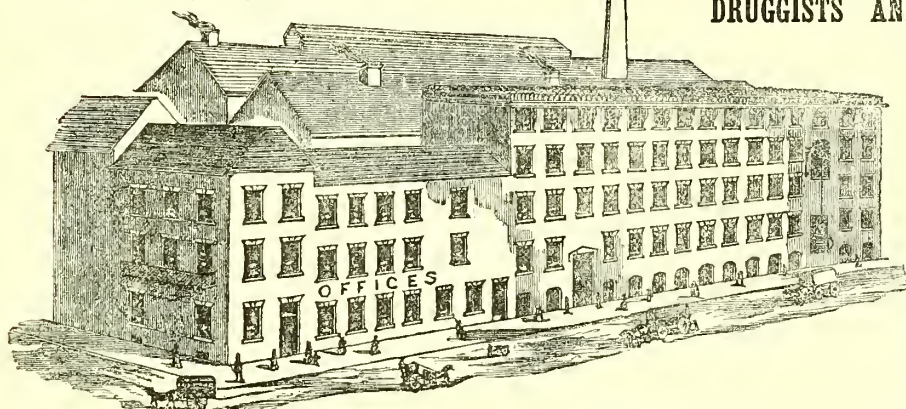
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The striking appearance resulting from the evaporation of Battley's Sedative (Plate III., Fig. 1) first drew our attention to the mode of investigation now described. We have examined it frequently and always have met with the same characters. The slides present an almost opaque mass of crystals of morphine salts and codeine, with a very small portion of narcotine (and meconic acid?), and so far as we have observed, complete absence of resinous matter and narceine. *Anyone who has studied the microscopic characters of this preparation will readily understand how it has kept its place with the profession in spite of the cheap imitations which have been so largely puffed as substitutes for it.* Though we have experimented much with a view to preparing a similar liquor, we have not yet arrived at an identical result. Of three makes which we have examined, one (Plate III., Fig. 5) is largely charged with resinous matter, and the proportion of crystalline constituents is so minute that we are satisfied its activity must be very small; another (Plate III., Fig. 4) gives a few morphine crystals, a good deal of narcotine, and more narceine; a third (Plate III., Fig. 6) is chiefly remarkable for its lack of everything crystalline.

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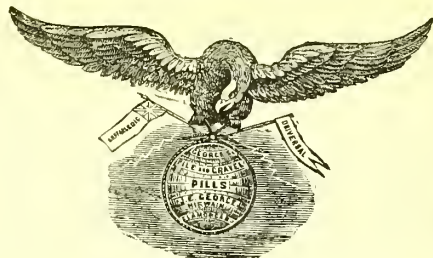
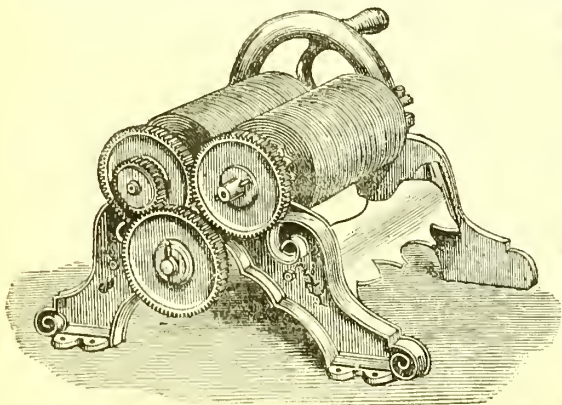


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| Capsules 1/- box 3/1 | | No. 0 best ordinary size -/6 .. 1/6 | |
| Do. French Cop. Capsules, | | Cop. Cubebs and Rha- | |
| cost the Chemists -/9 .. 2/6 | | tany -/6 .. 2/- | |

Denoual's Injection, to ensure a radical cure in two days (see directions). Trade Price, 18/- per dozen, to be retailed at 2s. 9d. stamped.

Copaliba No. 0 Green Labels, best 6/ per doz.; No. 1, 5/6; No. 2, 5/-.
Ditto ditto loose 9/6 .. 8/6 .. 7/6.
Santal Oil Capsules, 25/- per doz., 36 in each box; 5/6 per 100.

J. DENOUL, 4 New Cross Road, London, S.E.

Above Goods can be had on most advantageous terms through Lynch & Co.

PILL MACHINE

(COCKING'S PATENT DOUBLE-ACTION),

Used extensively in Great Britain, India, Australia, America, and the Continent,

PRICE £10.

Special Terms to Cash Buyers from the Inventor,

T. S. COCKING

Chemist,

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Also through the Sundry Houses.

WHAT IS GOUT ? WHAT IS RHEUMATISM ? WHAT IS RHEUMATIC GOUT ?

Those who suffer from these distressing maladies care little what the theoretical reply to the above questions may be, nor do we care to further afflict them with scientific supposition. The question is, **WHAT WILL REMOVE THEM ?** what will allay the agonising pain, remove the cause from the system, and restore the afflicted one to a normal state of health and wonted agility ? The question has been asked for years, but no satisfactory reply has been given, no *certain* cure recommended, until the discovery of Lindley's celebrated Gout and Rheumatic Pills. Since their introduction thousands have taken them, and there has never been one instance wherein they have been taken in vain !

Unfortunately there are so many so-called "remedies" recommended by so many well-meaning but irresponsible and often misinformed or ignorant people, as well as so many nostrums, introduced by charlatans into the market, that frequently enough the patient, after having tried a dozen or so different compounds without avail, comes to the conclusion that all specifics are alike—that nothing can be of any use, and that the ills from which he so constantly and so severely suffers are absolutely incurable. The wonder is, that after having been drenched with such a variety of compounds, he remains as well as he is. Let this be as it may, we have no hesitation in asserting (and it is confirmed by a multitude of testimonials) that **LINDLEY'S GOUT and RHEUMATIC PILLS** are the undoubted antidotes for GOUT, RHEUMATIC GOUT, RHEUMATISM, SCIATICA, LUMBAGO, TIC-DOULOUREUX, &c., more particularly and especially if used in connection with **LINDLEY'S RHEUMATIC EMBROCATION**. Words are of course valueless unless they convey truths ; but we defy any statement to be impugned which conveys this fact, that the above remedies have not only no equal, but are infallible.

LINDLEY'S RHEUMATIC EMBROCATION is the most effective external remedy known, as it instantly removes all excruciating pain, from whatever cause, including rheumatic gout, lumbago, sciatica, tic-douloureux, &c. By merely spreading over the affected parts on the ends of the fingers, or on spongy piline, the pain, no matter how severe, is instantaneously removed.

Mr. Inspector STRAW, of the Sheffield Borough Police Force, wrote on January 3, 1879 :—

"When I called at your shop two days ago I was quite unable to walk about without a stick, and then with difficulty. I took six of your pills at three times, which were given to me by Wm. Bailly, of 52 Earl Street, Sheffield, and on the following morning I was, I am happy to say, as sound as ever. I feel now able almost to challenge Weston at a mile."

WILM. SCHELIER, of Giessen, Germany, wrote on June 15, 1879 :—

"I received a box of your rheumatic pills and a bottle of the liniment from a friend, a few days ago, which I have proved to be the best remedies and specifics I have ever used for sciatic pains, and I am thankful to have found such."

On May 19, 1879, Dr. FRANCIS XAVIER and DON ALFREDO AGOSTINHO CORREA, of Lishou, Portugal, say :—

"We have tried your gout and rheumatic pills and embrocation, and find them the best we have ever used. You will greatly oblige by sending at earliest convenience one dozen boxes pills and one dozen bottles embrocation, each 2s. 9d. size."

Mr. WILLIAM ROWAN, 139 Cedar Street, New York, U.S. America, wrote on May 19, 1879 :—

"Mr. Lindley. Dear Sir,—The gout having come upon me very bad, I had to take to your pills—the old remedy. I got completely rid of it again after three doses, having contracted it by carelessly exposing myself to the severe damp and cold weather. A friend of mine out here, who has suffered very severely of late from rheumatic gout, asked me for a remedy ; I gave him six of your never-failing pills, which very promptly made him a sound man again. As my stock of your pills is running very low I am very anxious to get a fresh supply ; please forward by return mail 1 (one) large box (11s. size), to the above address, and believe me, yours truly,

WILLIAM ROWAN."

The above Pills and Embrocation are prepared solely by the Proprietor,

HENRY LINDLEY, Chemist, 57 South Street Moor, Sheffield

(Five years Principal Assistant to Robert Lathbury, Liverpool, Chemist by Special Appointment to the Queen.)

Sold retail in boxes, 1s. 1½d., 2s. 9d., 4s. 6d., and 11s. each ; and the Embrocation in bottles at 1s. 1½d., 2s. 9d., 4s. 6d., and 11s. each.

Canadian Agents : Messrs. H. SUGDEN EVANS & CO., Druggists, Montreal. Export Agents : Messrs. EVANS, SONS & CO., Liverpool ; and EVANS, LESCHER & WEBB, London.

IMPORTANT TO MOTHERS AND NURSES.



NUTTALL'S

CHILDREN'S COOLING, SOOTHING, AND TEETHING POWDERS

Are admitted by all who use them to be the best for safe, easy, and quick teething. These powders have been used a great many years for children when cutting their teeth, or affected with convulsions, fevers, thrush, colds, eruptions, or almost any ailment whatever. They have saved thousands from their graves. Give them a trial. In boxes, at 1s. 1½d. and 2s. 9d. A great saving in the 2s. 9d. boxes.

NUTTALL'S PATENT VEGETABLE PILLS

Are acknowledged to be the best family medicine known. This fine medicine is a direct purifier of the blood, good for indigestion, pain in the stomach, as fullness after meals ; faintness, heartburn, stomach, liver, and kidney complaints ; blotches of the skin, coughs, colds, bronchitis, and influenza, lowness of spirits, &c. They are wonderfully adapted for females of all ages. A gentle but effective tonic made genial to the taste. These pills are of great advantage to emigrants in preventing sea sickness.



Sold by all Chemists and Patent Medicine Dealers, in boxes, 9½d., 1s. 1½d., and 2s. 9d. each, or from the Proprietors, C. NUTTALL & SONS, Bacup, near Manchester.

"FOR THE BLOOD IS THE LIFE."

CLARKE'S

WORLD FAMED

BLOOD MIXTURE,

The Great BLOOD PURIFIER and RESTORER.

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The Celebrated CURE FOR Scrofula, Scurvy, Blood and Skin Diseases, and Sores of all kinds.

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Truth is a solid fact, more solid than the granite rock: it is the richest coin of the purest metal, free from alloy of any description. The shaft of envy will not face it, neither will the shots of prejudice enter it. It is surrounded on all sides by a thousand foes, but each and all, without exception, are mute beneath its piercing glance.

It is a Fact, as solid as the above, that

BEECHAM'S PILLS,

Which have been before the public for Thirty Years, have now become one of the leading Patent Medicines at the present day. From north to south, and from east to west, they are to be found in the homes of both the rich and the poor. All classes of Society use them, and they are by thousands declared to be

WORTH A GUINEA A BOX.

For a Weak Stomach, Impaired Digestion, and all Disorders of the Liver, they act like "MAGIC," and a few doses will be found to work wonders on the most important organs in the human machine. They strengthen the whole muscular system, restore the long-lost complexion, bring back the keen edge of appetite, and arouse into action, with the ROSE-BUD of health, the whole physical energy of the human frame. These are "FACTS" admitted by thousands, embracing all classes of Society, and one of the best guarantees to the Nervous and Debilitated is, BEECHAM'S PILLS have the LARGEST SALE of any Patent Medicine in England.

All Patent Medicine Dealers abroad will find BEECHAM'S PILLS one of the most profitable and one of the best selling articles in the Market. The demand for them is regular, and all Foreign Houses who are desirous of getting a First-class Patent Medicine are respectfully requested to get BEECHAM'S PILLS from the leading Wholesale Houses in England (as no business will be done with any Foreign House by the Proprietor direct).

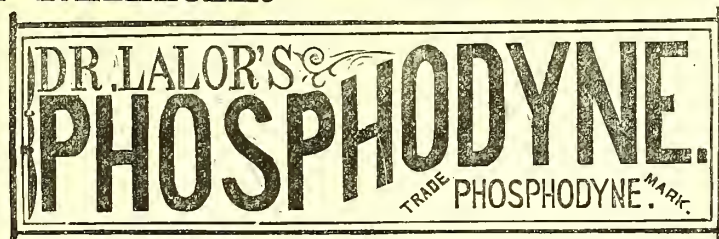
CAUTION.—The Public are requested to notice that the words "BEECHAM'S PILLS, ST. HELENS," are on the Government Stamp affixed to each Box of the Pills; if not on, they are a Forgery.

Prepared only, and Sold Wholesale and Retail, by the Proprietor,

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ST. HELENS, LANCASHIRE, ENGLAND.

In Boxes, 1s. 1½d. and 2s. 9d. each.

N.B.—FULL DIRECTIONS ARE GIVEN WITH EACH BOX.

TRADE MARK.—SANCTIONED BY HER MAJESTY'S GOVERNMENT.**HEALTH,
STRENGTH,****AND
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Protected under the Trade Marks Act (38 & 39 Vict., chap. 91. Enacted by the "Queen's Most Excellent Majesty," 20th August, 1875.

PLEASANT to the Taste. The only Safe, Prompt, and Reliable PHOSPHORIC REMEDY for Overworked Brain, Worry, Anxiety, Excitement, Late Hours, Business Pressure, Nervous Prostration, Wasting Diseases, Asthmatic, Consumptive, Stomach, and Liver Complaints, Impaired Nutrition, Impoverished Blood, Premature Decline, and all Morbid Conditions of the System dependent upon the deficiency of Vital Force.

PHOSPHODYNE

Purifies and Enriches the Blood; Clears the Skin; Thoroughly Invigorates the Brain, Nerves, and Muscles; Re-energises the Failing Functions of Life, and thus Imparts Energy and Fresh Vitality to the Exhausted Nervo-Electric Force; and Rapidly Cures every form of Nervous Debility, Paralysis, Nervous, Mind, and Heart Diseases, from whatever cause.

IMPORTANT TO EUROPEANS VISITING OR RESIDING IN HOT CLIMATES.

DR. LALOR'S PHOSPHODYNE has an enormous Sale in India, China, Africa, and other Hot Climates, from its possessing in the most perfectly assimilable form the essential Vitis properties of **PHOSPHORUS**, which re-animates the Exhausted Functions of Life when impaired by Heat or other causes. A very large number of Testimonials, from all parts of the World, freely offered from private persons, Naval, Military, Scientific, and Professional Men who are well known, speak of its marvellous powers in Nervous Debility, **WANT OF STAMINA, FEVERS, MALARIOUS DISEASES**, and as a **LIVER TONIC**.

SOLD IN BOTTLES, AT 4/6 AND 11/-,

BY ALL EXPORT, WHOLESALE, AND RETAIL MEDICINE VENDORS THROUGHOUT THE WORLD.

CAUTION.—The name, DR. LALOR'S PHOSPHODYNE, is blown in the glass of each bottle, and the GENUINE PHOSPHODYNE is manufactured only at Dr. LALOR'S Laboratory, London, England. Medicine Vendors are hereby warned that Legal Proceedings will be taken against all Persons selling the Fraudulent Imitation after this Notice.

IMPORTANT NOTICE.—Every Bottle bears the British Government Stamp, with the words, Dr. Lalor's Phosphodyne, London, England, by Order of Her Majesty's Honourable Commissioners. If not, it is a Forgery.

DR. ROBERT D. LALOR,

OF BAY HOUSE, 32 GAISFORD STREET, LONDON, ENGLAND,

The Sole Proprietor and Originator of **PHOSPHODYNE**,

Is prepared to Prove the following Facts in any Court of Law in London, England, and he respectfully requests Medicine Vendors and the Public to assist the cause of Truth and Right, against Falsehood and Fraud:

A BASE FRAUD is now being perpetrated by the Advertisement of a Worthless Imitation of **DR. LALOR'S PHOSPHODYNE** in the Newspaper Press of India and the Colonies, the nature of which may be guessed from the fact that the originators of these Advertisements **DO NOT** and **DARE NOT** insert them in the Papers Published in the United Kingdom; neither may the Spurious Article, sought to be Foisted upon the Public Abroad, **BE SOLD** in the British Isles.

PHOSPHODYNE was discovered and so named by **DR. R. D. LALOR**, in the year 1862, and the Title and Prospectus was duly Registered at Stationers' Hall, London, in the year 1864. This Title and Prospectus, and four of Dr. Lalor's Testimonials (the dates of which have been fraudulently altered from 1865, 1866, and 1867, as in the Original Letters, to 1870), have been Basely Pirated by the parties Advertising the False Phosphodyne. Copies of Original Letters, with Prospectus, sent post free.

The Genuine "**PHOSPHODYNE**" bears the Christian, Surname, and Address as above; also the Registered Trade Mark, "**PHOSPHODYNE**," to copy which is Felony.

APPOINTED FOREIGN AGENTS FOR DR. LALOR'S PHOSPHODYNE:—

TREACHER & Co., Bombay, Byculla, and Poona.
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R. ROBERTSON, Ceylon.
O'HARA & Co., Bangalore.
E. GILLON & Co., Lahore.
RANGOON DISPENSARY, 215 Dalhouse Street.

J. LEWELLYN & Co., Shanghai, China.
BRITISH DISPENSARY, Shanghai.
HONG KONG DISPENSARY, Hong Kong.
HEYNES, MATTHEW & Co., Cape Town.
FORDRED & WHITE, Grahamstown.
IMPEY & Co., Port Elizabeth.
W. F. LANCE & Co., East London.

HOSKING & Co., Kimberley, & Diamond Fields.
HEMMONS, LAWS & Co., Melbourne.
BARRAUD & SON, Wellington, New Zealand.
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GREAT SAVING OF MONEY AND LABOUR. SOMETHING NEW ELEGANCE AND DURABILITY COMBINED.
GREAT REDUCTION IN PRICE OF THE CELEBRATED AMERICAN PATENT RECESS LABELLED SHOP ROUNDS.
 Parties about to Open New Establishments or Refit Old Premises should compare following Nett Prices and send for Sample Sheet of Labels.
THESE PRICES INCLUDE GLASS LABELS ATTACHED TO BOTTLES READY FOR USE.

| | | FLINT GLASS. | | BLUE GLASS. | | | | | | | | | | | |
|---------|-----------|--------------|------|-------------|------|------------|--|----------|------------|--------------|-------------|------|------|------|------------|
| Size. | Height. | N.M. | W.M. | N.M. | W.M. | | | Size. | Height. | FLINT GLASS. | BLUE GLASS. | N.M. | W.M. | N.M. | W.M. |
| 4 ounce | 5½ inches | 12/ | 14/ | 14/ | 16/ | per dozen. | | 32 ounce | 10½ inches | 18/ | 20/ | 20/ | 24/ | 24/ | per dozen. |
| 8 " | 7 " | 14/ | 16/ | 16/ | 19/ | " | | 42 " | 11 " | 20/ | 24/ | 24/ | 27/ | " | " |
| 16 " | 8 " | 15/ | 17/ | 18/ | 20/ | " | | ½ gall. | 12½ " | 25/ | 30/ | 30/ | 34/ | " | " |
| 20 " | 9 " | 16/ | 18/ | 19/ | 21/ | " | | 1 " | 14 " | 32/ | 40/ | 40/ | 48/ | " | " |

Prices of other Shop Bottles, Pots, &c., on application.

Mr. ALEX. KINNINMONT, F.C.S., Pharmaceutical Chemist, Glasgow, writes—"I have had these bottles in constant use for over four years and can confidently recommend them for their clean and brilliant appearance and durability. They are also safer to use than the ordinary labelled bottles, as, from having the name of the contents all in front in two lines, there is much less danger of mistake."

Mr. D. D. DEANS, Chemist, Melrose, writes—"Am immensely pleased with these new hand bottles; they are really magnificent; there is no comparison between them and the old shop rounds as regards either price or appearance, and then they will never change, as the labels are literally indestructible."

Mr. W. BRAY, Chemist, Glasgow, writes—"They are everything that can be desired, and are greatly admired by all who see them."

SOLE CONSIGNEES FOR GREAT BRITAIN AND IRELAND—

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ROBERT GIBSON,
MEDICATED LOZENGE MANUFACTURER,

CARLTON WORKS, HULME, MANCHESTER, AND 1 FINSBURY CIRCUS, LONDON,
MAKER BY STEAM POWER OF MEDICATED AND HIGH-CLASS LOZENGES OF EVERY KIND.

Boiled Sugars, of the Finest Quality, Packed for Home or Export.

Fragrant Bouquet Lozenges, 100 in an Ounce, have an immense sale.

SUGAR WORM CAKES,

Keep in any Climate, give great satisfaction, and have an increasing demand, especially in Africa and Australia. Put up in Tins, each containing 6 Dozen or 12 Dozen Cakes.

Price List, sent by post on application. Our Goods can be bought through any Wholesale House in London.

TOWLE'S CHLORODYNE

The Original Preparation, as approved by the Medical Profession on account of its known composition and uniform strength.
 Retail at 13½d. 2s. 9d., and 4s. 6d. Dispensing, 4 ozs., 4s. 6d., and 10 ozs., 11s., stamped.

LIQ. CHLORODYNII,

As originally introduced by A. P. Towle, and free from stamp duty for dispensing.

4 ozs., 4s.; ½ lb., 5s. 6d.; 1 lb., 10s.

TOWLE'S CHLORODYNE LOZENGES AND JUJUBES

In 1, 2, and 4 lb. Bottles, at 3s. per lb., and 6d. and 1s. Boxes. Foiled, Lined and neatly got up for the counter, 4s. 6d. and 9s. per doz

A. P. TOWLE, Chlorodyne Manufacturer,
75 BACK PICCADILLY, MANCHESTER.

Bills with name on application with instructions for forwarding.

Dr. J. COLLIS BROWNE'S CHLORODYNE.

THE ORIGINAL AND ONLY GENUINE.

IMPORTANT CAUTIONS

From Lord Chancellor SELBORNE, Vice-Chancellor Sir W. PAGE WOOD,
and the LORDS JUSTICES OF APPEAL.

VICE-CHANCELLOR SIR W. PAGE WOOD, by whom the suit in Chancery was first heard, stated in his judgment that Dr. J. Collis Browne was undoubtedly the Inventor of Chlorodyne, that the whole story of the Defendant Freeman was as deliberately untrue as the falsehood he had deposed to with reference to the use of his Chlorodyne in the Hospital.

The VICE-CHANCELLOR also stated, 'that Chlorodyne was a fanciful name, and had application been made sooner, the Court would have given Dr. Browne protection.'

LORD CHANCELLOR SELBORNE coincided with the judgment of the Vice-Chancellor upon this point, and stated 'that had application been made at a proper time and place, the Court would have found means to restrain the Defendant from misrepresenting the decision of the Vice-Chancellor.'

LORD JUSTICE JAMES, on appeal, stated in his judgment, 'that the Defendant Freeman had made a deliberate misrepresentation of the decision of Vice-Chancellor Wood.'

It was proved in Court, on affidavit by Mrs. Forbes, of Paris, that the testimonial published in the *Times*, November 14th, 1865, speaking of the great efficacy of Chlorodyne in Cholera, referred to Dr. J. Collis Browne's Chlorodyne, and that she never used any other, that she had written to the Defendant Freeman to that effect; notwithstanding which notice the Defendant publishes the said testimonial as referring to his medicine.

The Editor of the *Medical Times*, in his report on Chlorodyne, January 13th, 1866, gives information that the Chlorodyne referred to was the medicine introduced by a retired Army Medical Officer, which was Dr. J. Collis Browne; still this is published by the Defendant as testimony to his medicine.

Numerous affidavits from eminent Physicians and others were produced in Court, stating that Dr. J. Collis Browne was the inventor of Chlorodyne, and that when prescribing they mean no other.

The Defendant himself publishes that his compound is in effect and composition quite different to any other preparation. nevertheless he assumes the name, testimonials, &c., of Chlorodyne.

Technicalities in law prevent that protection which the public should justly have against such a course of conduct. It is now incumbent on all who purchase Chlorodyne to see that the name, 'Dr. J. Collis Browne's Chlorodyne,' is engraved on the Government Stamp, as it is not sold otherwise. All other compounds under the name of Chlorodyne are spurious. All attempts at analysis have failed; hence the statement that the constituents of Chlorodyne are known is a misrepresentation.

FURTHER IMPORTANT NOTICE.

The subjoined list of eminent Firms concur with Vice-Chancellor Sir W. Page Wood's statement in Court, that Dr. Collis Browne was undoubtedly the Inventor of Chlorodyne; and that when Chlorodyne, or the Original Chlorodyne, is ordered, they invariably supply Dr. J. Collis Browne's:—

| | | |
|---------------------------------|-----------------------------------|--------------------------------------|
| Apothecaries' Hall, London. | Gale & Co., London. | Newbery & Sons, London. |
| Allen, Hanbury & Co., " | Giles & Son, Clifton. | Oldham, G., & Co., Dublin. |
| Baiss Brothers, " | Goulding, Messrs. Cork. | Parsons & Richardson, Leicester. |
| Banks & Richards, Birmingham. | Gratton & Co., Belfast. | Peake, Allen & Co., Dublin. |
| Barron, Harvey & Co., London. | Grimwade & Ridley, London. | Raimes & Co., Liverpool. |
| Bell, John, & Co., " | Grindley & Son, Chester. | Raimes & Co., York. |
| Corbyn & Co., " | Hearon, Squire & Francis, London. | Raimes, Blanchards & Co., Edinburgh. |
| Cox & Gould, " | Hodgkinson, Tonge & Stead, " | Sang & Barker, " |
| Curling & Co., " | Hopkins & Williams " | Sanger, J., & Sons, London. |
| Curtis & Co., " | Hunt & Co., Exeter. | Sim, James, & Co., Aberdeen. |
| Davy, M'Murdo & Co., " | Hunt, A., & Co., " | Smeeton, W., Leeds. |
| Drew, Barron & Co., " | Johnson, J. H. & Co., Liverpool. | Southall & Co., Birmingham. |
| Drew, B., & Alexander, " | Langton, W., & Co., London. | Sutton, W., & Co., London. |
| Dunn & Company, " | Lynch & Co., " | Tomlinson, Hayward & Co., Lincoln. |
| Edwards, W., " | Mander, Weaver, Wolverhampton. | Treacher, Hodgkinson & Co., " |
| Evans, Gadd & Co., Exeter. | Marsden & Sons, London. | Westrup, J. B., Kensington. |
| Evans, Lescher & Evans, London. | Maw & Son, " | Westwood & Hopkins, Lincoln. |
| Ferris & Co., Bristol. | Meggeson & Co. " | Woolley, James, Manchester. |
| Foulger, S., & Son, London. | Mackay, John, Edinburgh. | Wyleys & Brown, Coventry. |
| Frazer & Green, Glasgow. | Morson, T., & Son, London. | Yates & Co., London. |

After these public statements in a Court of Equity, and subsequent confirmation by the trade at large, no Chemist can conscientiously use or sell any other compound for Chlorodyne without committing a breach of faith, unjust to patient and physician. The value of the remedy alone creates the great demand.

Sold in Bottles—1s. 1½d., 2s. 9d., 4s. 6d., and 11s. Usual Discount to the Profession.

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MEDICAL BOTTLE MANUFACTURERS,
Will send their List of Prices on application.

Shippers, Wholesale Houses, and Bottlers of Proprietary Articles should apply at once if they are in search of a first-class article at a low price.

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CHEAPER BOTTLES. BARNSBURY GLASS CO., 5 LITTLE BRITAIN, LONDON, E.C.

(Opposite Marx, Son, & Thompson's.)

| Made Vials. | 1 & 1dr. | 2dr. | 4oz. | 1oz. | 1 1/2oz. | 2oz. | 3oz. | 4oz. | 6oz. | 8oz. |
|---|----------|------|------|------|----------|------|------|------|------|------|
| Blue Chlorodyne, octagons | 2/9 | 3/3 | 3/9 | 4/3 | 4/9 | 6/ | 7/ | 8/3 | 9/6 | 10/6 |
| Homeopathic, plain or spotted | 3/ | 3/3 | 3/9 | 4/6 | 5/ | 6/ | 7/3 | 9/ | 10/ | 12/ |
| White flint, tall, medium, or squat round octagon or graduated to teaspoons | 2/6 | 3/ | 3/6 | 4/ | 4/6 | 5/9 | 6/9 | 7/9 | 10/ | 12/ |
| Green glass, ditto | 2/3 | 2/9 | 3/3 | 3/9 | 4/3 | 5/6 | 6/3 | 7/ | 9/6 | 10/6 |
| Round shouldered, lime and glycerine | 2/9 | 3/3 | 3/9 | 4/3 | 4/9 | 6/ | 7/ | 7/6 | 9/ | 11/6 |
| Ditto, ditto, wide mouth | 2/9 | 3/3 | 3/9 | 4/3 | 4/9 | 6/ | 7/ | 7/6 | 9/ | 11/6 |
| Essences.—White flint glass, round, oval, and square | 4/6 | 5/6 | 7/ | 8/ | 9/ | 9/ | | | | |
| Lubin's or Oldham, square | 4/9 | 5/9 | 7/3 | 8/3 | 9/3 | 9/3 | | | | |
| Rimmed or Cannon's, round | 5/ | 6/ | 7/6 | 8/6 | 9/6 | 9/6 | | | | |
| Lavenders, long neck, squares | 5/ | 6/ | 7/6 | 8/6 | 10/ | 10/ | 12/ | 15/ | | |
| Ditto Oxford | 5/ | 6/ | 7/6 | 8/6 | 10/ | 10/ | 12/ | 15/ | | |
| White Flint Pomades. | | | | | | | | | | |
| Round, lipped, or turned back mouths | 3/3 | 4/ | 6/ | 8/ | 8/3 | 9/ | 10/ | | | |
| Ditto, ditto, stoppered | — | — | 14/ | 16/ | 18/ | 19/ | 20/ | 25/ | 30/ | |
| Oval or round, black caps | — | — | — | 11/ | 12/ | 14/ | 16/6 | | | |
| Ditto, boxwood caps | — | — | — | 15/ | 16/ | 18/ | 22/ | | | |
| Round boxwood, screw caps | — | — | — | 17/ | 18/ | 20/ | 24/ | | | |
| Squat, boxwood screw caps | — | — | — | — | 18/ | 20/ | 24/ | | | |
| Blue Fluted Poison | — | 4/ | 5/ | 6/ | 8/ | 10/ | 12/ | 14/ | 15/ | |

Patent Medicines and Proprietary Goods, as Powell's, Floriline, Kay's Linseed, Winslow's Syrup, Atkinson's Preservative, Seigel's Syrup—Green glass .. 3/3 3/9 5/6 6/ 7/ 8/ 9/ 10/ 12/

Five gross quantities, name plate charged, 5/.

Kali and Quinine. 1/2oz. 1oz. 1 1/2oz. 2oz. 3oz. 4oz. 8oz.

Wide mouth, white flint .. 4/3 4/9 6/ 7/ 7/6 8/6 11/9

Dispensing Medicals.

Any shape or graduated. 2oz. 3oz. 4oz. 6oz. 8oz. 10oz. 12oz. 16oz. 20oz. 24oz.

tions, Blue or Green

Tint .. 7/ 7/ 8/ 9/6 9/6 11/6 14/ 16/ 19/ 22/

Dispensing (Water Blue) Medicals. Very best goods in the

English market .. 9/ 10/ 10/ 11/6 11/6 15/ 18/ 22/ 28/ 28/

Name Plates free of charge, in Crates.

Citrate of Magnesia. Blue, plain .. 3oz., 7/6; 6oz. 9/6; 8oz. 12/

Ditto, ditto, fitted with boxwood top corks .. 12/6 14/6 18/

*. In 5-gross quantities, own name free of charge.

Mineral Water and Sauce Bottles.

Long neck, squares and rounds, 5 or 6 oz. Sauce .. 9/ per gross.

Round cork, lined and stoppered, as Lea & Perrin's, York

Relish, &c. .. 11/6 ..

Soda, Lemon, and Seltzer, usual shapes and size .. 13/ per gross.

Split sodas, &c. .. 10/6 ..

Barrett & Elers' Patent with ebonite or glass stoppers—

[Names free in quantities.] Splits, 30/; full size, 33/ ..

Dutch Drop, Oil, Gum, Ink, Polish Bottles, 1d.

"Green Burst Off." Judson's Dye bottles, all at 2/6 per gross.

*. We are frequently having new moulds made for these goods, and should gladly esteem inquiries for sizes, and quotations for quantities.

Ink, Oil, Polish, Gum, and Sauce; made mouths.

Green glass .. 2oz., 6/; 3oz., 7/; 4 oz. 8/; 5oz., 9/; 6oz., 10/; 8oz., 12/.

Feeding Bottles.

Straight green glass .. 10/

Straight white glass .. 13/

Curved neck green glass .. 10/

Curved neck white glass .. 13/

Fitted green glass, wood tops, corks, complete .. 30/

Fitted white glass, porcelain caps, one brush, packed in neat box, &c., complete .. 48/

Fitted white glass, superior manufacture, porcelain caps and unions, two brushes, ditto .. 60/

*. Five Gross Orders we can include Name and Address on the bottle and box, free of extra charge.

Feeding Bottle Accessories.

Done shields .. 1/9

Glass tubes, melted ends .. 0/9

Earthenware unions .. 1/3

Glazed ditto .. 3/6

Boxwood ditto .. 0/9

Boxwood plug tops and cork

rings .. 4/6

Glazed earthenware plugs and

cork rings .. 6/6

Earthenware caps, cork lined .. 9/

Ditto ditto, superior manufacture, ivory glaze .. 10/6

Cork rings .. 1/

Vinegar, Pickle, Jelly, and Mustard Bottles.

Imperial pickle quarts .. 22/

" vinegar quarts .. 21/

Reputed .. 20/

Pickle pints, large .. 15/6

" small .. 14/6

" half-pint .. 13/

" quarter-pint .. 11/

Jelly quarts .. 22/

" pints .. 18/

" half-pints .. 15/

Mustards, 1-lb. .. 15/

" 1-lb. .. 13/

" 1-lb. .. 11/

Indiarubber teats, white .. 3/3

Ditto, black and red .. 7/6

Indiarubber tubing, white .. 3/3

Ditto, black and red .. 7/6

Wholesale Druggists' Bottles a specialite.

TERMS: Net Cash, seven days from date of invoice, with approved references; or 3d. per gross less, cash with order. All goods carefully packed for export, at buyers' risk, and no allowance can be made for carriage or breakage. Export orders must be accompanied with draft payable on demand.

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In 100-lb. Tins,

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In 5-lb. or 10-lb. Tins,

1/10 per lb.

In 1-lb. Tins, 2/ per lb.

PACKAGES INCLUDED.

In bulk (packages extra),

1/9 per lb.

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PLOUGH COURT, 37 LOMBARD STREET, LONDON, E.C.

N.B.—For General List of Drugs and Chemicals, see Price Current, posted free on application.

SCHERING'S**PURE CHEMICALS.****ACID GALLIC, TANNIC, PYROGALLIC.****GLYCERINE, extra re-distilled, 1260.****KOLBE'S PATENT****SALICYLIC ACID AND SALTS.****POTASS BROMIDE AND IODIDE.**

Purest, indifferent to Baryta Salts.

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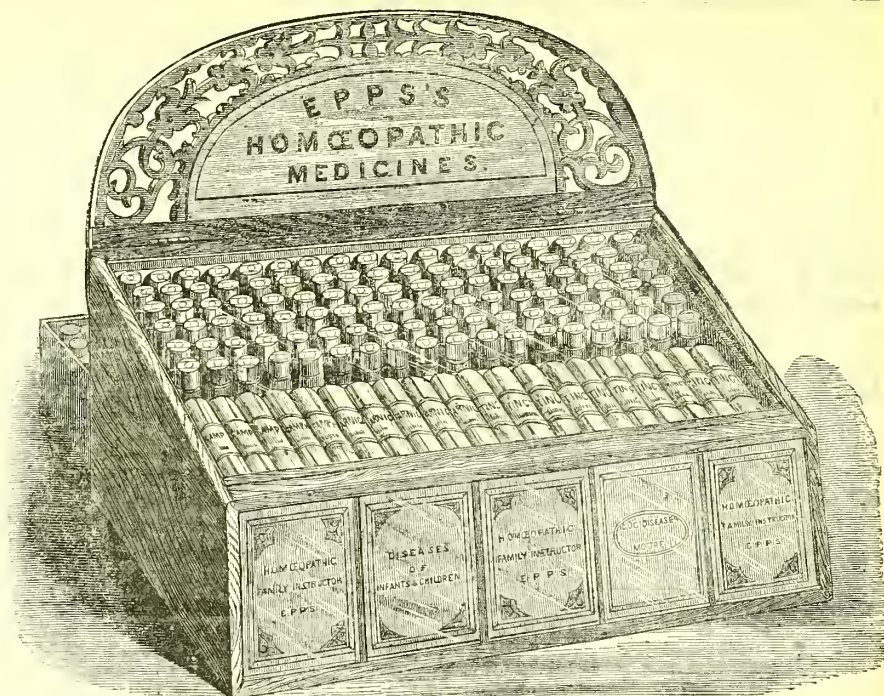
"Chemische Fabrik auf Actien, vormals E. SCHERING," Berlin,

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CONTENTS,
as per
Price List,
£6 15s., net;
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Retailing for
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Our **LINTS TEAR EASILY**, but Nos. 00, 0, and 1 Surgeons' more readily across the Fabric.

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The "LANCET," August 24, 1878, says:—

"Messrs. ROBINSON & SONS, of New Brampton, near Chesterfield, have exhibited some beautiful specimens of Lint, which attract the attention of French and foreign surgeons. They look very soft and silky. Their flax and cotton samples are equally good. These exhibitors especially draw the attention of French medical men (who employ the thready French lint) to their cheap cotton lint, which is employed in the majority of English hospitals, and which is cheap and easy to apply. They lay great stress on the care they take to rid the lint of chlorine, acids, or other irritating substances. They have also a collection of bandages very remarkable for their flexibility and facility of application. They look comfortable to wear, and ventilation must take place better with them than through a more closely-woven tissue."

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NESTLE'S MILK FOOD is prepared at Vevey, Switzerland, from the pure milk of Alpine fed cows, the finest wheaten flour and sugar, combined in exact proportions to imitate closely the natural food for infants. It is thoroughly cooked, and reduced to a fine powder, perfectly soluble in water, requires only the simple addition of water to prepare it for use—in this respect having the advantage over all other foods.

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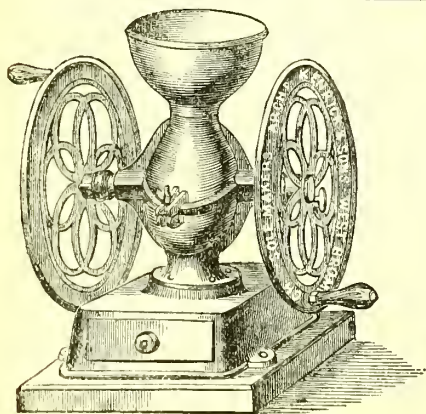
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Details of In-
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full information
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AMERICAN DRUG & SPICE MILL.

Advantages—

The cutters or grinders never wear out. Cutters or Grinders can be cleaned and refixed in one minute, thus any quantity of different articles can be ground without fear of intermixture.

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Larger size if required.

See PHARMACEUTICAL JOURNAL, November 17, 1877, page 399.

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H. L. T.'s production stands entirely upon its own merits, as the Purest Cocoa manufactured.

That the Trade may have an opportunity of testing, H. L. T. sends samples for gratuitous distribution amongst the medical profession upon receiving from Agents a list of same.

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Sauces, and Condiments.—E. LAZENBY & SON (6 Edwards Street, Portman Square), Sole Proprietors of the Celebrated Receipts, and Manufacturers of the Pickles, Sauces, and Condiments so long and favourably distinguished by their name, beg to remind the Public that every article prepared by them is guaranteed as entirely unadulterated. Manufactory, 18 Trinity Street, London, S.E.

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Best Birdseye, in $\frac{1}{4}$ lb. tins; also $\frac{1}{4}$ lb., $\frac{1}{8}$ lb., $\frac{1}{16}$ lb. packets.

Superfine Birdseye, in $\frac{1}{4}$ lb. tins; also $\frac{1}{4}$ lb., $\frac{1}{8}$ lb., $\frac{1}{16}$ lb. "

Imperial Birdseye, Foil, 2 oz., 1 oz.

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Superfine Oriental Returns, In $\frac{1}{4}$ lb. tins; also A Mild Smoking Tobacco. Foil, 2 oz., 1 oz.

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Superfine Shag ... $\frac{1}{4}$ lb., $\frac{1}{8}$ lb., $\frac{1}{16}$ lb.

Fine Shag ... $\frac{1}{4}$ lb., $\frac{1}{8}$ lb., $\frac{1}{16}$ lb.

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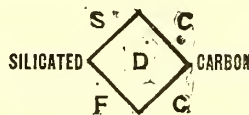
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PACKED IN SMALL BOXES, 1s. per lb. EXTRA.

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Are made from the finest mustard seeds only. Their compounds, as manufactured for upwards of a century, are guaranteed free from all ingredients imparting spurious heat, and are therefore equally suitable for both table and medical purposes.

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Pure Cocoa only, with the superfluous
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This pure and delicious Cocoa, consisting exclusively of choice Cocoa Nibs from which the superfluous oil has been extracted, is strongly recommended to all who appreciate the full flavour and fine aroma of Cocoa.

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ESTABLISHED 1836.

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QUALITY AND STRENGTH GUARANTEED.

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THOMAS KNOWLES,

CHEMIST,

40 SEYMOUR STREET, EUSTON SQUARE, LONDON, N.W.

THE WANT OF THE DAY.

Registered.



1d., 3d., & 6d.

MAKES STARCH LINEN AS NEW.

Starched Linen is made to Iron Easier, and is unequalled for Stiffness and Gloss. Sold by most starch sellers, at 1d., 3d., and 6d. each. Wholesale by the Proprietor,

T. CRITCHLEY,CHEMIST & WHOLESALE DRUGGIST
BLACKBURN.

CAUTION!—Makers and Sellers of imitations will be prosecuted.

ESTABLISHED 1843.

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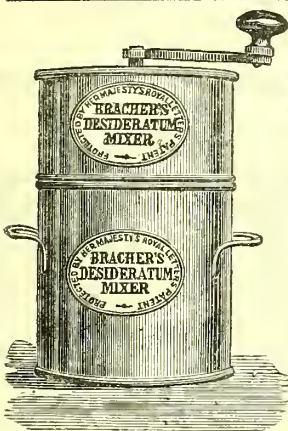
Wholesale & Export Confectioner,

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Lozenges of all descriptions made from Customers' private formulæ (or ingredients) and stamped with name if required.

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THE PESTLE AND MORTAR SUPERSEDED BY
BRACHER'S "DESIDERATUM" MIXER,
For Mixing all descriptions of Powders, heavy or light.

ADVANTAGES.

These Machines are specially adapted for mixing Powders of all descriptions, either in small or large quantities, and are the most rapid and efficient Mixers in use. They can be used either with or without the cover, are portable, require no fixing, and can be readily taken apart when necessary.

Powders which contain concrete lumps are easily reduced, and in no case need the ingredients pass through the machine more than once.

The larger sizes discharge the contents by withdrawing a slide in the bottom of the Mixer.

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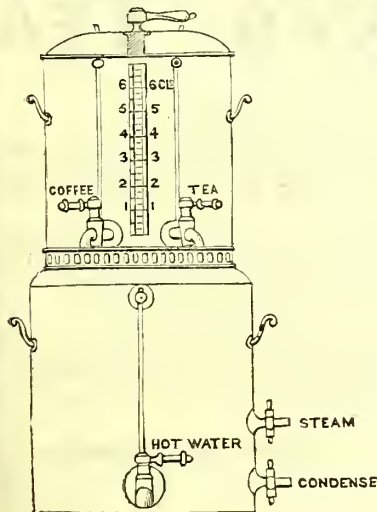
For CHEMISTS and DRUGGISTS they prove invaluable for mixing all kinds of Powders, such as Cattle Drenches, Horse and Cow Spices, Baking and Egg Powders, Sherbet, Lemon Kahi, &c., &c.

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PATENT STEAM COFFEE AND TEA FILTER.



Apparatus for making Extracts of Substances by Steam Pressure, for the use of Large Establishments, Steamers, Hotels, Coffee Taverns, Restaurants, and Cafés; also for Chemists to make Extracts or Infusions of Substances.

ETZENSBERGER'S

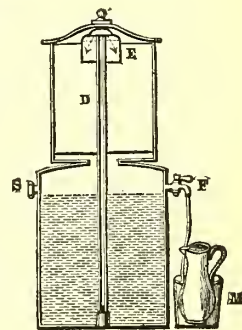
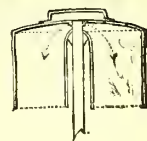
PATENT CAFETIERE,

On the same principle for Family use.

Great Economy, Excellent Aroma, Perfect Safety,
and Cleanliness.

FOR PARTICULARS AND ORDERS APPLY TO—

R. ETZENSBERGER, Patentee,
13 St. Andrew Street,
HOLBORN CIRCUS, LONDON, E.C.,
AND AT THE
MIDLAND GRAND HOTEL, LONDON, N.W.



SOLE AGENT FOR THE UNITED STATES—

G. W. MAYNARD, 24 Cliff Street, New York.

THE BEST PACKET TEAS

ARE SUPPLIED BY THE

Tea Supply Association,

OF

54 HIGH STREET, BOROUGH, LONDON, S.E.

THE WATCH TEA.—Bonuses consist of Ladies' and Gentlemen's Watches with 14 and 28 pounds of Tea; also Clocks and Timepieces with 4, 6, 8, 10, 12, 18, and 24 pounds of Tea.

BOOK TEA.—Bonuses consist of Books, ranging in value from 2/6 to 10/6, given with 3 pounds of Tea.

THE T.S.A. GENERAL BONUS TEA.—Bonuses consist of a selection of nearly 500 Useful Articles, INCLUDING WATCHES, CLOCKS, and BOOKS, given with quantities of Tea varying from a Quarter-pound upwards.

Also **SURPRISE TEA**, containing a useful Bonus in every packet.

Also **THE IMPERIAL BLEND**, being a Non-Bonus Tea of first-class value, retailing at 2/-, 2/6, 2/8, 3/-, and 3/6 per pound.

AGENTS WANTED where none are already appointed. For particulars apply to G. BEAUMONT, Manager.

CHEMISTS' TEA AGENCY.

BROKEN-LEAF TEA, 1s. 8d. per lb.

A Money-saving Tea, absolutely pure, in half-pound packets 10d. The small leaf from fine India and China Teas, stronger, richer, and cheaper than any whole-leaf tea. Wholesale to Dealers and Sellers and Agents. 40 lbs. sent free to any railway station in the kingdom.—**WALKER & DALRYMPLE.** Warehouses—154 and 155 Whitechapel Road, London. P.O.O. payable at Head Office. Bankers—The National Provincial Bank of England. N.B.—Samples posted free.

MORGAN'S PATENT CRUCIBLES



HAVE RECEIVED AT EACH EXHIBITION the HIGHEST AWARD made for CRUCIBLES. The quality is uniform, withstanding the greatest heat without danger, and they never crack. Porous Battery Cells, &c., are manufactured by

THE PATENT PLUMBAGO CRUCIBLE COMPANY,

TRADE MARK.

BATTERSEA WORKS, LONDON, S.W.

SPECIAL NOTICE TO DRUGGISTS.

Increase your Business by Selling the ORIENTAL COMPANY'S TEA.

IN SUBMITTING THEIR TEAS to Agents, the above-named Company desire to offer the following remarks:—

THE PROPRIETORS have been long connected with the EAST, as IMPORT and EXPORT MERCHANTS, and, with the means at their command, are enabled to avail themselves of their experience in purchasing at the proper season, from the best markets, and direct from the TEA PLANTERS, thereby securing the choicest pickings, and saving all intermediate profits between producer and consumer.

THE TEAS being thus bought are carefully cut, sifted, and mixed by the most improved machinery, under the superintendence of a PRACTICAL TEAMAN, whose whole study has been devoted to the ART OF BLENDING TEAS to suit the Tastes of the general public; and it may be added that it is greatly due to judicious blending that the COMPANY'S TEAS have acquired the position they now hold.

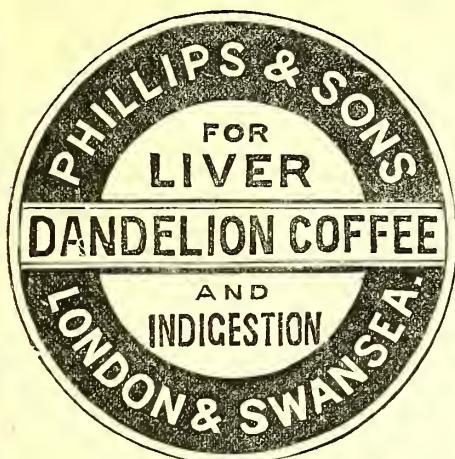
INDIAN TEAS have within the last few years obtained such favour with connoisseurs for Strength, Aroma, and Delicacy of Flavour, that THE ORIENTAL COMPANY have introduced, as a SPECIALTY, a blend of these fine Teas, the sale of which has attained such proportions as to warrant the assertion that it produces the most delicious beverage ever offered to the public.

THE TEAS are packed in specially-prepared wrappers, with TINFOIL LINING, in $\frac{1}{4}$ -lb., $\frac{1}{2}$ -lb., and 1-lb. Packets; 5-lb., 10-lb., and 20-lb. Tins; 20-lb. Boxes, Half-chests, and Chests; and retailed as under.

| Fine China Blended Tea, Magenta Label | | | | | | | | Retail at | 2/0 per lb. |
|---------------------------------------|---|---|--------|---|---|---|---|-----------|-------------|
| Finest | „ | „ | Blue | „ | „ | „ | „ | „ | 3/0 „ |
| Fine Indian | „ | „ | Green | „ | „ | „ | „ | „ | 2/6 „ |
| Finest | „ | „ | Yellow | „ | „ | „ | „ | „ | 4/0 „ |

For Terms of Agency and other particulars apply at the Office—

418 OXFORD STREET, LONDON, W.

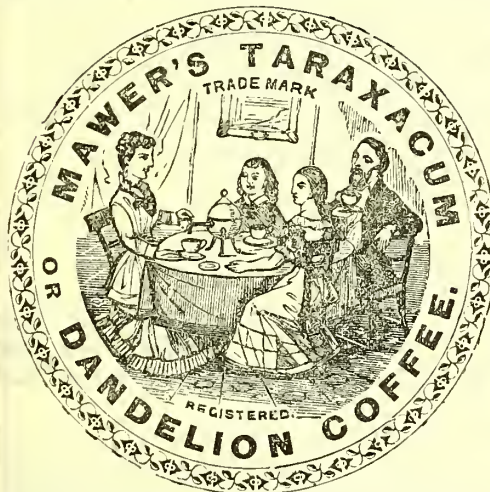


ESTABLISHED 1760.
 Contains three times the strength of ordinary Breakfast Beverages.
ONCE TRIED ALWAYS USED.
 The valuable properties of the Dandelion Root, recognised by eminent Physicians for many centuries, has now become an article of daily use.
 Sold by all Chemists throughout the Kingdom in Tins at 1s. 6d., 1s., 9d., and 6d.—*Price Lists on application to the Manufacturers,*
PHILLIPS & SON,
 CASTLE SQUARE, SWANSEA,
 AND ARTHUR STREET WEST, LONDON BRIDGE,
 OR OF
 JAS. WOOLLEY, SON & CO., Manchester.
 W. MATHER, Export Agent, London.
 CLARKE & McMULLAN, Belfast.
 GOODALL, BACKHOUSE & CO., Leeds.
 McMAISTER & HODGSON, Dublin.
 BARCLAY & SONS, Farringdon Street.
 EVANS, SONS & CO., Liverpool, &c.
 MAW, SON & THOMPSON, Aldersgate Street, London.
 BURGOYNE, BURBIDGES & CYRIAX, 16 Coleman Street.
 COLONIAL AGENTS.—Melbourne, Adelaide, and Sydney—P. T. FALK; BLYTHE & CO. New Zealand, Nelson, Canterbury, Auckland—A. SCLANDERS & CO.; E. & A. ISAACS. Cape, Algoa Bay, East London—L. DREYFUS.
SPECIAL TERMS TO MERCHANTS AND SHIPPERS.

BROOK & CO.'S DANDELION COFFEE

IS the Best and the Cheapest, containing three times the strength of ordinary Coffee. The above is highly recommended by the Medical Faculty as an Agreeable, Palatable, and Medicinal BEVERAGE. See Reports from Dr. Hassall, M.D., Author of "Food and its Adulterations," &c.; also, Otto Hehner, F.C.S., Analyst. Sold in Tins, 6d., 1s., 1s. 9d., by most respectable Chemists. Wholesale Agents: Goodall, Backhouse & Co., Leeds; Wm. Mather, London; Jas. Woolley, Son & Co. and W. Mather, Manchester; H. Glover, Son & Co., Bradford; and all Wholesale Houses.

Caution—See you get **BROOK'S**, as inferior qualities are often substituted.
MAKERS—BROOK & COMPANY, 76 HANOVER STREET, MANCHESTER.



MAWER'S TARAXACUM OR DANDELION COFFEE

Prepared from the Fresh Root.

Notwithstanding the many attempts to imitate this incomparable preparation, Mawer's manufacture continues to rise rapidly in public estimation, and the sales have of late immensely increased. Wherever it is introduced it meets with increasing appreciation and continuous sales, for beyond doubt it excels all in quality, strength, aroma, and cheapness.

Chemists everywhere find this the most saleable article of the name. It is neatly packed in air-tight tins, and is spoken well of throughout Great Britain and several of our Colonies. To be had from all London Patent Medicine and Sundry Houses, and direct from the Maker in Tins, 6d., 9d., 1s., 1s. 6d., and 2s. Write for terms to

EDWARD MAWER,
 Chemist,
 HIGH WYCOMBE, BUCKS.

Sold by Chemists everywhere.

Handbills and Show Cards supplied gratis.

BRANSON'S COFFEE EXTRACT,

For the Immediate Production of Fine and Pure Coffee.

Owing to completed improvements in its manufacture

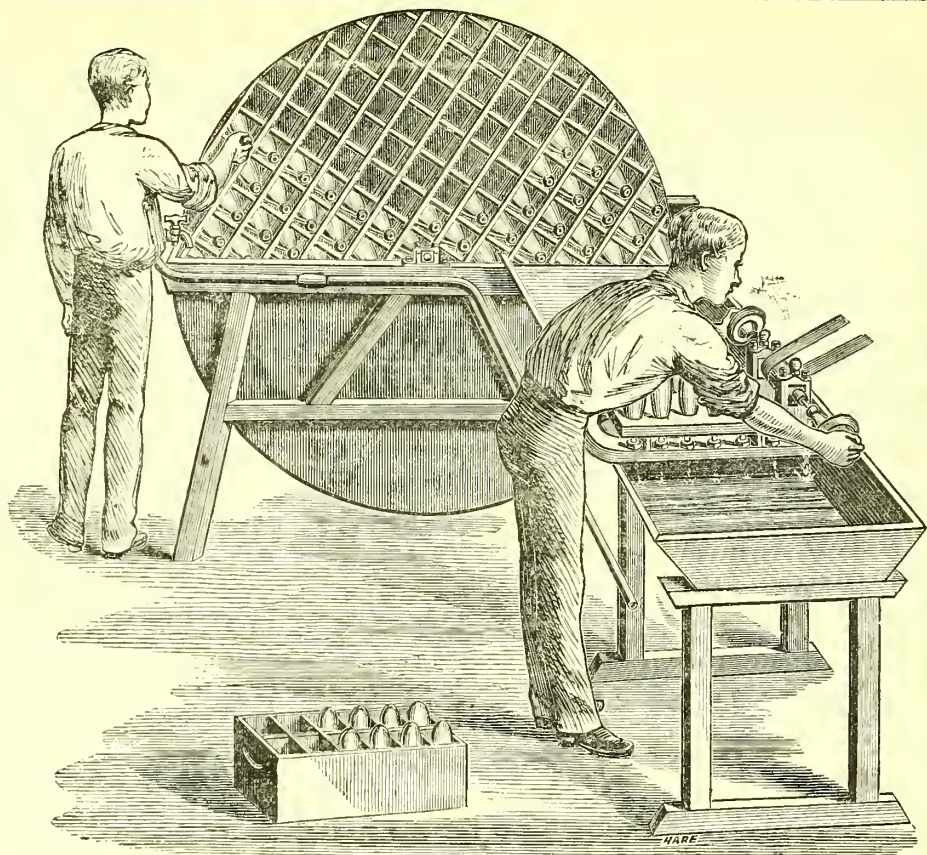
BRANSON'S COFFEE EXTRACT

now specially prepared for use in hot climates, and is Guaranteed not to become oxydised nor fermented in any change of temperature. It is economical in use, there is no waste, and its permanent stimulant properties are more valuable than those of alcohol. Sold by all chemists in bottles at 1s. and 2s. each.

Wholesale Agents: Barclay & Sons, W. Edwards & Son, J. Sanger & Sons, F. Newbery & Sons, Lynch & Co., London; McMaster, Hodgson & Co., Dublin; Hasletts & Co., Belfast; J. Mackay & Co., Edinburgh, Scotland; Goodall, Backhouse & Co., Leeds.

BOTTLE WASHING APPARATUS.

QUICK, CERTAIN, AND CLEAN IN ACTION.



HAYWARD TYLER & CO.,

WHITECROSS STREET, LONDON.

E. S. HINDLEY, BOURTON, DORSET.

SMALL STEAM ENGINES

(Economical in Fuel and in First Cost).

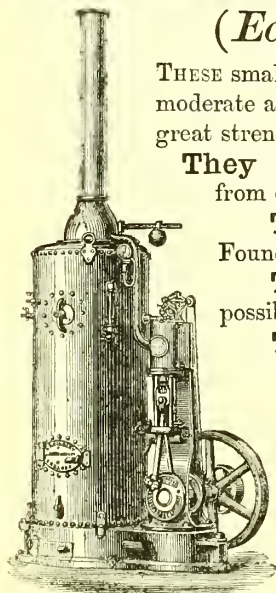
THESE small Engines are specially adapted for driving Soda Water Machinery wherever a moderate amount of cheap power is required. They combine simplicity, compactness, and great strength, are easily managed, occupy very little space, and require no fixing.

They are available at any time, as steam can be got up in half an hour from cold water.

They require no fixing, being erected on a Cast-Iron Water Tank Foundation.

They are simple in construction, and, having as few working parts as possible, are not likely to get out of repair.

They can be driven by a boy. Can be made to burn GAS instead of Coal.



| Nominal horse power... | 1 | 1½ | 2 | 3 | 4 | 5 | 6 | 8 | 10 |
|---|----|----|----|----|----|-----|-----|-----|-----|
| Engine and Boiler combined...£ | 39 | 47 | 55 | 70 | 88 | 100 | 115 | 135 | 157 |
| Engine and Boiler on three Wheels, with Handle.....£ | 41 | 49 | 57 | 75 | 95 | 110 | 125 | 145 | 167 |

ALL SIZES IN STOCK—DELIVERED FREE TO ANY STATION

Illustrated Catalogues with full particulars on application.

PATENT SODA WATER BOTTLES.**BARRETT & ELSERS,**

9 DACRE STREET, WESTMINSTER, LONDON, S.W.

BY ROYAL LETTERS PATENT,



DATED JUNE 2, 1874, No. 1923.

The Best, Cheapest, and
Cleanest Stoppers before the
Trade.

In extensive use.

No Rubber ring that can
be taken out, or come out
and get detached from the
Bottle.

Great Saving effected.

No Marbles.

All Corks, Wires, String,
and Skilled Labour super-
seded.



Easily and Rapidly Filled,
Opened, Cleansed & Washed

In universal demand.

No Small Chamber or Con-
tractions in the Neck to Pre-
vent Thorough Washing, &c.

No Marbles.

Perfectly Fitting Stoppers.

No Leakage.

BARRETT & ELSERS' FILLING MACHINES AND SYRUP PUMP COMBINED have been proved to be the Best and
Cheapest in the market, of which now upwards of 1,000 have been sold.

IMPORTANT NOTICE.—Should the Bottles break, the Stoppers may be newly fitted up and used again in fresh
Bottles, thereby being a great saving and advantage over some other Patents.

MONDOLLOT'S PATENT**Soda Water Machinery,**

Continuous System without Gazometer.

**GOLD MEDAL AT THE PARIS EXHIBITION,
1878.**

Full particulars on application to the Sole Agents,

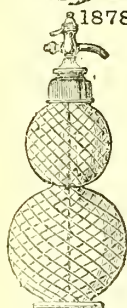
MESSRS. L. FRIQUET & CO.,

13 LITTLE JAMES STREET, BEDFORD ROW,
LONDON, W.C.

Sole Agents also for BRIET'S GAZOGENES and SYPHONS.



1878



EUGENE GERAUT & CO.

NEW PATENT LEVER SELTZOGENES.

For the immediate production of Eau de Viehy, Soda Water, Sparkling Lemonade, Aerated Waters.

First introduced by EUGENE GERAUT & Co. in 1853.

3-pint, wire, 13/; 5-pint, wire, 18/; 8-pint, wire, 30/.
Cane covered, 3-pint, 6d.; 5-pint, 1/; 8-pint, 2/ each extra.
Strongly silver-plated top, 5/ each extra. 3-pint size,
strongly silver-plated, richly decorated porcelain stands,
30/ each; 5-pint size, ditto, ditto, 38/ each; 8-pint size,
ditto, ditto, 48/ each.

Our well-known Seltzogenes are improved yearly, and have
already stood a public test of upwards of Twenty Years,
and are acknowledged as **THE VERY BEST.**

POWDERS FOR THE ABOVE:—Subject.—3-pint, per dozen
boxes, 22/; 5-pint, ditto, 36/; 8-pint, ditto, 65/.

LIBERAL DISCOUNT FOR LARGE QUANTITIES.

1 & 2 CORPORATION BUILDINGS, FARRINGTON ROAD, LONDON, E.C.



1873.

SYPHONS.

IMPORTANT NOTICE.

Great Reduction in Price.

Clear or coloured glass, pure ENGLISH BLOCK
TIN TOPS, with piston or cap.

22/6 per dozen, for quantities of not less
than one gross.

25/ per dozen, for less than one gross.

Packing in Cask, 5/ per gross.

The Name marked on the metals free of charge for
quantities of not less than one gross.

The Name engraved on the glass for quantities of not
less than one thousand, 2d. each extra.



1870.



THE BRITISH SYPHON MANUFACTORY.

EUGSTER & KOERTGEN, PROPRIETORS,

OFFICES: 2 Gresham Buildings, Basinghall St., E.C. } LONDON.
WORKS: 6½ Wickham St., Tyers St., Lambeth, S.E. }

SELTZOGENES.

| | | | |
|----------------------|------|----------------------|------|
| 3-pint size, Wire .. | 13/- | 3-pint size, Cane .. | 13/6 |
| 5 " " " .. | 18/- | 5 " " " .. | 19/- |
| 8 " " " .. | 30/- | | |

Silver-plated tops, 5/ extra.

POWDERS—3-pint, 22/; 5-pint, 36/ per doz. boxes, containing 10 charges each.
LIBERAL DISCOUNT.

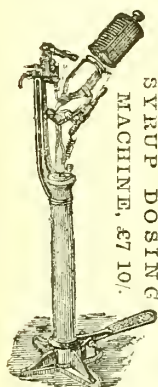
SYPHONS.

SHORT LEVERS, 22/6; LONG LEVERS, 24/ per doz. net.

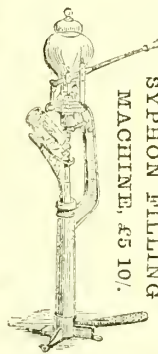
White, Blue, Amber, or Green Bottles—cylindrical or oval shaped, with cap
or spring tops—Silver-plated, from 8s. per dozen extra. Name stamped on
Metal tops, free of charge for one gross. Name and Trade-mark engraved
on the Bottles, by the acid process, from 1½d. to 2½d. each extra.

Each Seltzogene and Syphon thoroughly tested before sent out.

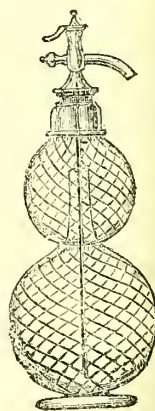
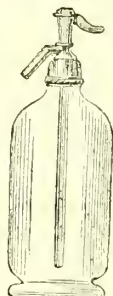
ALL METAL WARRANTED FREE FROM LEAD.



SYRUP DOSING
MACHINE, £7 10/.



SYPHON FILLING
MACHINE, £5 10/.



SODA WATER AND LEMONADE MACHINE,

TO MAKE ALL THE AERATED DRINKS.

WITH RECIPES AND INSTRUCTIONS FOR WORKING.

| | | | | |
|--|-----|-----|---|---|
| A Machine, with Dial and Water Gauges, to make 300 dozen per day | ... | £30 | 0 | 0 |
| Ditto ditto ditto 1,000 ditto | ... | £40 | 0 | 0 |
| Engine and Boiler to drive same | ... | £30 | 0 | 0 |

PARTICULARS OF

N. G. WILCOCKS, Engineer, BATH.

G. COLE,

MANUFACTURER OF BOXES FOR CODD'S PATENT BOTTLES,
AND MAKER OF

ALL KINDS OF PACKING CASES

FOR THE SODA WATER TRADE.

N.B.—Orders executed with dispatch, and on the most reasonable terms.

STEAM WORKS:—

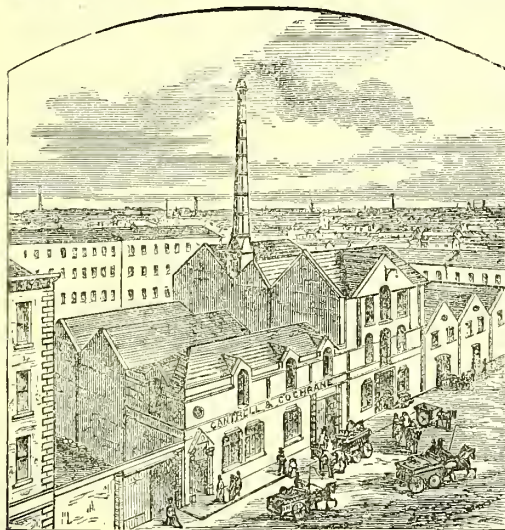
48 and 50 TRINITY STREET, ROTHERHITHE, S.E.

CANTRELL & COCHRANE,

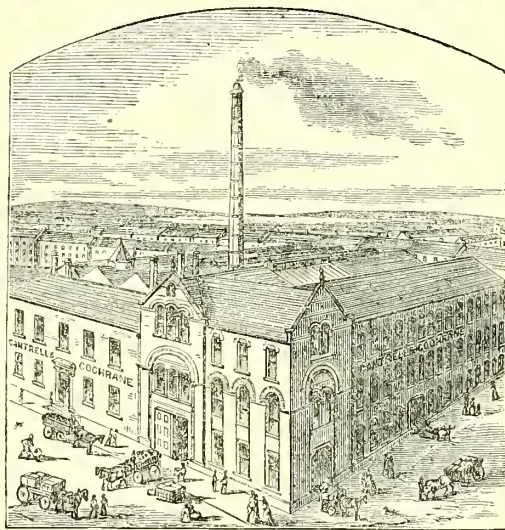
ORIGINAL MAKERS OF THE JUSTLY CELEBRATED

AROMATIC GINGER ALE.

ALL OUR DRINKS ARE NON-ALCOHOLIC.



WORKS, NASSAU PLACE, DUBLIN.



WORKS, CROMAC BUILDING, BELFAST.

ALL OUR DRINKS ARE NON-ALCOHOLIC.

MAKERS BY APPOINTMENT TO HIS EXCELLENCY THE LORD LIEUTENANT OF IRELAND.

CONTRACTORS FOR THE

Abyssinian Expedition.
 Inman Steam Ship Company.
 Oceanic Steam Ship Company.

Anchor Steam Ship Company.
 Montreal Steam Ship Company.
 Pacific Steam Ship Company.

Cunard Steam Ship Company.
 National Steam Ship Company.
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The following List of their preparations is worthy of the attention of Chemists:—

AROMATIC GINGER ALE.

Cali, or Potass Water.
 Soda Water.
 Seltzer Water.
 Lithia Water.

Lemonade.
 Summer Beverage.
 Lime Juice.
 Lime Juice Syrup.

Aerated Sarsaparilla.
 „ Dandelion.
 „ Quinine.
 Carrara Water.

“MONTSERRAT” LIME JUICE CHAMPAGNE (Aerated).

The Machinery and Appliances used in the Laboratory and Factory for their production are of the most approved construction; the Water and all the Materials used are of the highest degree of purity; and as the greatest care is exercised in their manufacture, they may be relied on as absolutely free from organic and mineral contamination.

Testimonials from the MEDICAL PROFESSION, from accomplished ANALYSTS, and from PUBLIC MEN eminent in Literature, Science, and Art, at once give an assurance of the excellence of these Beverages, and show the universal esteem in which they are held.

INTERNATIONAL RECOGNITION has been given to their merits at various Exhibitions all over the World. Eight Gold and Prize Medals have been awarded.

All Goods ordered for Export are specially prepared and packed for their respective destinations, and are guaranteed to retain their qualities unimpaired. Terms and Prices may be obtained on application to—

CANTRELL & COCHRANE,

Nassau Place, DUBLIN. Cromac Building, BELFAST. 14 & 16 Union Street, EDINBURGH. or, 53 Surrey Street, GLASGOW.

PURVEYORS TO HER MAJESTY'S IMPERIAL HOUSES OF PARLIAMENT.

WILHELMS QUELLE

(WILLIAM'S WELL)

NATURAL MINERAL WATER.
SPARKLING. EFFERVESCING. INVIGORATING.

"The Beau Ideal of Table Water."—LONDON FIGARO.

"The Pearl of Table Waters."—MORNING POST.

ABSOLUTELY
PURE.

WILHELMS QUELLE.

HEAD OFFICE—
7 BILLITER SQUARE, E.C.

"A very safe as well as useful dietetic Water for daily drinking. It is pure, bright, sparkling, and very pleasant."—

"Highly recommended."—NAVAL AND MILITARY GAZETTE.

MEDICAL TIMES.

"Remarkable for its perfect clearness, great purity, and agreeable flavour."—LONDON FIGARO.

"Has the recommendation of the very highest names in the medical world."—ILLUSTRATED SPORTING AND DRAMATIC NEWS.

"Will greatly promote digestion in
many cases of chronic dyspepsia."—
MORELL MACKENZIE, M.D.

WILHELMS QUELLE.

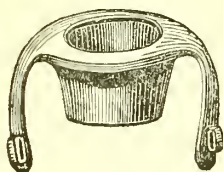
"Develops the bouquet of the
more delicate wines, which are deterio-
rated by admixture with most mineral
waters."—JOHN HARLEY, M.D.

PRICE.—50 large Bottles, 25s.; 100 small Bottles, 40s., bottles included. Delivered free within four miles radius of Charing Cross. Smaller quantities can be obtained from all Chemists and Grocers. Patent Corks may be had, by which a great saving is obtained. For detailed Price Lists apply to Head Office of the WILHELMS QUELLE,

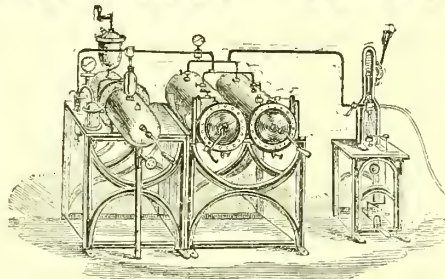
7 BILLITER SQUARE, E.C.

SODA-WATER MACHINERY.

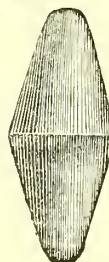
PATENT NOZZLE



FITS ANY BOTTLE.



CONE STOPPER.



BALL STOPPER.



SODA WATER MACHINE COMPLETE, WITH RACK.

DAVENPORT'S NOZZLE AND STOPPER is the best Patent for utilising old Bottles, and converting them into Patents. No Corks or Wire, and saving entire cost in one season. The New Nickel-plated Nozzle makes this the most attractive Patent in use. Trial allowed. Prices lowered. Send for Samples. New Bottles ready fitted for use now supplied. Catalogues of Soda-Water Machines, Ice-Making Machines, Engines, Boilers, Copper Cylinders, Syphons, Seltzogenes, Filters, &c., and all accessories to the Soda-Water Trade.

AGENTS FOR HAYWARD TYLER & CO'S SODA-WATER MACHINERY.

BARRETT & ELSERS' Patent Stoppers in Lamont's Bottles.

Illustrated Catalogues, of sixty-four pages, post free to all parts of the World.

DAVENPORT & CO., Soda-Water Machinists and General Machinery Agents,
99^N HIGH HOLBORN. LONDON.



LONDON, 1862.



LONDON, 1873-74.



PARIS, 1867-78.



VIENNA, 1873.



PHILADELPHIA, 1876.



CAPE, 1877.

SODA WATER MACHINERY,

And all accessories connected with the business.

HANDSOME MARBLE COUNTER FOUNTAINS,

For dispensing Iced Fruit Drinks.

MACHINES FROM 30 POUNDS.

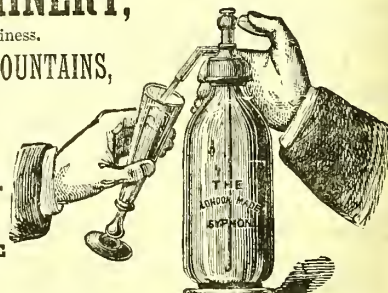
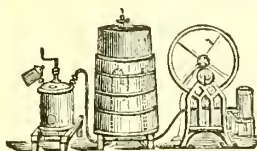
Sole Agents for Codd's Patent Globe-Stoppered Soda Water Bottles.

In use by over 500 established Soda Water Makers in England alone.

SOLE MAKERS OF THE IMPROVED LONDON-MADE
SYPHON, 2s. each in quantities.

CATALOGUE FORWARDED FREE.

THE "LONDON-MADE" SYPHON.



BARNETT, SON & FOSTER, 23^T Forston St., Shepherdess Walk, City Road, London, N.

LAMPLOUGH'S EFFERVESCENT PYRETIC SALINE.



HAVE IT IN YOUR HOUSES AND TRAVELS, USING NO OTHER SALINE; it gives instant relief in Headaches, Sea or Bilious Sickness, and quickly cures the worst form of Eruptive or Skin Complaints. The various diseases arising from Constipation, the Liver, or Blood Impurities, Inoculation, the results of breathing air infected with Fevers, Measles, or Smallpox, are frequently prevented and certainly cured by its use.

The sale of these Saline Salts having greatly increased during the past few years, I beg most cordially to thank those who sell and recommend the same, and also to inform intending dealers that they will find Messrs. BARCLAY, EDWARDS, MAW, NEWBURY, SANGER, SUTTON, and the Wholesale Houses generally, ready to supply their wants. This Advertisement is found needful in consequence of the trouble, cost, and inconvenience in the keeping and collection of numerous small accounts. *Note.*—The Name, Trade Mark, Labels, Wrappers, &c., are all Registered and Entered at Stationers' Hall.

113 HOLBORN HILL, LONDON, E.C.



SPECIAL NOTICE.—Medical Gentlemen having fever cases, and desirous of trying the Saline, can have a single bottle at wholesale prices by sending their cards.

PARNELL'S CHALYBEATE SALINE.

An Agreeable Cooling Febrifuge and Tonic Aperient Effervescent Salt, being a Chalybeate Water in a solid form.

ANALYTICAL REPORT BY DR. T. REDWOOD.

As the result of a careful analysis I am enabled to state that Parnell's Chalybeate Saline is what it purports to be, a mild Chalybeate and tonic, possessing aperient and alterative properties to a sufficient extent to render it an efficient, and as I believe, a valuable medicine. The ingredients are judiciously combined so as to yield, when mixed with water, an agreeable effervescent draught.

T. REDWOOD, Ph.D., F.I.C., F.C.S.,

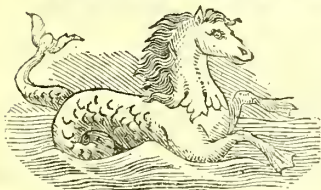
Professor of Chemistry and Pharmacy to the Pharmaceutical Society of Great Britain.

To be obtained in Bottles, 2s. 6d., from SANGER & CO., NEWBURY & SON, and all Wholesale and Retail Chemists, and from

26 BUCKINGHAM PALACE ROAD, S.W.

Show Cards and Handbills sent free on application.

Paris Agent—M. SWANN, Rue Castiglione.



REGISTERED TRADE MARK.

Natural Mineral Waters of "Apollinaris," "Hunyadi Janos," Vals, Vichy, Carlsbad, Seltzer, Kissingen, Homburg, Pullna, Friedrichshall, &c., direct from the Springs.

Also the **ARTIFICIAL MINERAL WATERS** prepared by Dr. STRUVE & CO., at the Royal German Spa, Brighton, and R. ELLIS & SON, Ruthin.

Appointed Agents for the celebrated "APOLLINARIS WATER."

W. BEST & SONS, Foreign Wine, Spirit, and Mineral Water Merchants, 22 Henrietta Street, Cavendish Square, London, W.

THE LEAMINGTON

"APNEUMATIC"
TRADE MARK

MINERAL WATERS

GINGER ALE (Aromatic).—There is now a large consumption in private families of this very popular beverage, its Aromatic properties and Brilliancy of Colour are perfection; part of a bottle may be used, and the remainder if re-corked will keep in perfect condition.

Apneumatic Soda Water.
Apneumatic Brighton Seltzer.
Apneumatic Potass Water.

Apneumatic Lithia Water.
Apneumatic Aerated Water.
Lemonade.

Dr. A. H. HASSALL, in his recent Analysis, says:—"I have repeatedly Analysed the Aerated Waters manufactured by Messrs. Kinmond & Co., and have always been able to report thereon in terms of the highest praise."

Our terms are more favourable for a family trade than those of any first-class makers.

KINMOND & CO., late J. DAILY & CO., LEAMINGTON.

Trade List and Descriptive Pamphlet of the Apneumatic process free on application.

PURE AERATED WATERS.

MANUFACTURED BY

T. & F. J. TAYLOR, NEWPORT PAGNELL.

ESTABLISHED 1835.

Purity and Excellence of the Water certified by Analysis by
PROFESSOR ATTFIELD, Ph.D., F.C.S.

NEWPORT PAGNELL SODA WATER, containing 10 grains of Bicarbonate of Soda in each bottle.

AERATED WATER, without Alkali.

POTASH WATER, containing 10 grains or 20 grains of Bicarbonate of Potash in each bottle.

LITHIA AND POTASH WATER.

SELTZER WATER, prepared according to Analysis of the Natural Water.

EFFERVESCENT LEMONADE, superior in flavour colourless, and warranted to retain its brilliancy.

Each Bottle is protected by a Label bearing the Signature of the Firm.

"ABSOLUTELY PURE."

SEE ANALYSES. Sent post free on application.

ELLIS'S



REGISTERED.

RUTHIN

WATERS.

CORKS BRANDED "R. ELLIS & SON, RUTHIN," and every label bears their Trade Mark. Sold everywhere, and wholesale of

R. ELLIS & SON, RUTHIN, NORTH WALES.

London Agents: W. BEST & SONS, Henrietta St., Cavendish Square.

Soda, Potass.
Seltzer, Lemon-
ade, also Water
without Alkali.
For GOUT,
Lithia Water, &
Lithia &
Potass Water.

MILLS & CO.

BOURNE WATER,

THE PUREST IN ENGLAND.

MILLS & CO., Manufacturers of the
Original BOURNE ARTESIAN AERATED WATERS.

BOURNE SODA WATER, unequalled for
its natural Alkalinity.

BOURNE POTASH WATER—a Special
Remedy for Rheumatism and Gout.

BOURNE LEMONADE—Superior Quality,
made from the Fruit.

BOURNE LITHIA WATER—Specific for
the Gout. Guaranteed to contain a fixed quantity of Lithia.

BOURNE SELTZER WATER—The natural
Alkalinity of the Bourne Artesian Well Water, combined
with Artificial Salts, produces one of the best articles made.
This Seltzer Water is well adapted for invalids for its purity.

When taken at dinner-time, it promotes digestion.
Early in the morning, slightly aperient.

R. M. MILLS & CO., MANUFACTURERS, BOURNE.
Messrs. Padgett & Son, Wine Merchants, 27 Motcombe
Street, and Messrs. Hardy & Co., Chemists, 42 Fenchurch
Street, corner of Mincing Lane, Wholesale Agents,
London.

And their appointed Agents throughout the Kingdom.

GENUINE BRIGHTON SELTZER AND OTHER AERATED WATERS,

Prepared with scrupulous care as to chemical accuracy, and
with the Natural Spring Water of Brighton, the Purest
in the Kingdom.

JOHN CHALLONER & SONS,
MINERAL WATER MANUFACTURERS,
PROVIDENCE PLACE,
BRIGHTON.



See our Advertisement, May Edition.

RANDALL, SLOPER & CO., SODA WATER MANUFACTURERS, SOUTHAMPTON.

GOODS FORWARDED CARRIAGE PAID WITHIN 80 MILES OF
SOUTHAMPTON, ON ORDERS OF 2 GROSS AND UPWARDS.

Soda, Seltzer, Potash & Aerated Waters
supplied in Syphon Bottles.

Importers of Hunyadi János, Friedrichshall, Vichy,
Pullna, Carlsbad, and other Foreign Mineral Waters,
supplied at Prices which will bear comparison with
London Rates.

PRICE LISTS FORWARDED ON APPLICATION.

J. H. CUFF'S MINERAL WATERS,

Atkinson St., Deansgate,
MANCHESTER.

SODA WATER
SELTZER WATER
POTASS WATER
15 grs.

LEMONADE
GINGER ALE
LITHIA WATER
5 grs.

LITHIA WATER WITH POTASS.
QUININE TONIC WATER, &c., &c.

SENT IN BIN CASES. NO PACKING REQUIRED.

Carriage paid on 12 Doz. assorted, or 6 Doz. of one kind.


Priced Lists free on application.

DISCOUNT ACCORDING TO QUANTITY.

SPECIAL TERMS FOR EXPORT ORDERS.

Attention is directed to Cuff's Soda, Seltzer, and Potass
Waters, and Ginger Ale (the latter a speciality), all of which
command a very extensive and ready sale.

Cuff's Waters are prepared expressly for a High-class
Family Trade.

BINGLEY'S

ANALYSED
SODA WATER.
SELTZER.
POTASH.
LEMONADE.
LITHIA, &c.

MANUFACTURED BY

JOHN BINGLEY, Pharmaceutical Chemist,
NORTHAMPTON.

A copy of Professor Atfield's Report will be forwarded by
post on application.

FOREIGN MINERAL WATERS.

FREDERICKSHALL (5 Cases, 6d. per Case less) 24/6 Case, 30 bot... 34/ Case, 60 1/2-bot
APOLLINARIS (20 1/2 ppr., 1/- per 1/2 ppr. less) 25/ 1/2 ppr., 50 " 33/ 1/2 ppr., 100 "
Hampers free, carriage paid; Empty Bottles, 6d. per dozen.
HUNYADI JANOS (10 Cases, 1/2-bts., 5/- less; 10 Cases, bts., 3/- each less)
30/- Case, 25 bts. ... 50/- Case, 50 1/2-bts.
SELTZER ... 11/6 1/2 ppr., 25 " ... 15/6 1/2 ppr., 50 "
PULLNA ... 18/- Case, 20 " ... 30/- Case, 50 "
VICHY ... 31/- " 50 " ... 27/- " 50 "
CARLSBAD ... 37/6 " 50 "
KISSENGEN ... 45/- " 50 "
SCHWALLBACH ... 27/6 " 50 "
HOMBURG ... 37/6 " 50 "
WILDUNGEN ... 40/- " 50 "
CARLSBAD SALTS, 1/2-Bots., 21/- per doz.; 1/2-Bots., 41/- per doz.; Bots., 80/- per doz.

FINE NORWEGIAN BLOCK ICE.

ORIGINAL BLOCKS, 2 to 3 cwt., each ... 2/6 per cwt
1 cwt. to 2 cwt., each ... 3d. per lb. 1 Under 1 cwt. ... 1d. per lb.
Packing and Mats for Original Blocks free; 3d. each allowed for Mats if returned
in good condition.

PRINTED DIRECTIONS for STORING ICE sent free on application.

W. B. HARRISON,
Importer of Ice & Mineral Waters,
6 BRIDGE STREET, SUNDERLAND.

HAY'S SOLUBLE ESSENCE OF JAMAICA GINGER

(GUARANTEED PURE AND FREE FROM CAPSICUM).



This highly concentrated Essence has the purest Jamaica Ginger flavour and aroma, is highly adapted for the manufacture of Aërated Waters, and for all dietetic, medicinal, and pharmaceutical purposes.

THE COST of this Essence in the manufacture of Ginger Beer, &c., is a little under 2½d. per dozen bottles. Dose (when used medicinally), 10 or 15 drops to half-a-teaspoonful in water.

Trade Price, 5s. per lb.

THE COMPOUND ESSENCE

(GUARANTEED PURE AND FREE FROM CAPSICUM).

Trade Price, 5s. 6d. per lb.

This Essence, which is an addition of *Vanilla, Lemon, and other flavours* to the above, is strongly recommended for the manufacture of Ginger Beer, Wines, &c., to which it imparts with the GINGER a PECULIARLY FINE FRUITY FLAVOUR and AROMA. THE COST of this Essence in the manufacture of Ginger Beer, &c., is a little under 3d. per dozen bottles.

Directions for the use of this and the preceding Essence.

For GINGER BEER, CORDIALS, &c., 8 fluid ounces will be required to make inclusively one gallon of Syrup, or 1 in 20. For WINES, one pint of Essence will flavour 5 gallons, or 1 in 40.

THE COMPOUND FORTIFIED ESSENCE Specially adapted for the Manufacture of GINGER ALE.

Trade Price, 5s. 6d. per lb.

THIS ESSENCE, besides its special adaptation as above, is strongly recommended for the manufacture of GINGER BEER and other kinds of Aërated Beverages, especially in those cases where it is desired to impart to those drinks at a SMALL COST the FULLEST amount of PUNGENCY with the FINE GINGER AROMA and FRUITY FLAVOURS of the LAST-MENTIONED ESSENCE.

DIRECTIONS.—For the manufacture of GINGER ALE, one pint will be required inclusively for four gallons of Syrup, or five fluid ounces in each gallon. For GINGER BEER or GINGERADE, one pint in five gallons Syrup, or four fluid ounces in each gallon. THE COST of this Essence in the manufacture of GINGER ALE is 1½d. per dozen bottles, and for GINGER BEER or GINGERADE a little under 1½d. per dozen bottles.

MEDICAL AND OTHER OPINIONS ON THE SOLUBLE ESSENCE:—

"Singularly free from resin."—*The Lancet*, London, July 13th, 1878.

"It is a pure, elegant preparation, and is free from resinous matter. Ginger Beer made with it is clear and transparent, has the aroma and flavour of the Ginger, and is very pleasing to the palate."—*Medical Times and Gazette*, London, March 16th, 1878.

"It should entirely supersede the official preparation of the *British Pharmacopœia*. The Ginger Beer made with this pure TINCTURE OF GINGER is extremely grateful and palatable. It is clear and bright as water; in fact, it will be scarcely recognised under the old name, and is CERTAINLY PREFERABLE TO SOME WINES we have tasted under the name of CHAMPAGNE."—*Medical Press*, London, March 20th, 1878.

"It is a Pharmaceutical Desideratum. Ginger Beer manufactured from this ESSENCE has the purest Jamaica Ginger Aroma, distinguishable as soon as poured out. It is a beverage fit for any gentleman's table, and ought to attain great popularity."—*The Chemist and Druggist*, London, November 15th, 1877.

"Contains the Essential Oil or Aromatic constituent of the root, has the Aroma of Ginger without the unpleasant taste of the resin, and is specially adapted for flavouring Ginger Beer."—*Pharmaceutical Journal*, London, December, 1877.

"It is really necessary that a superior Ginger Beer should be introduced to the public, and in Mr. Hay's Ginger Essence we find the very ingredient to bring about such a desideratum."—*Mineral Water Trade Recorder*, London, May 1st, 1878.

PREPARED BY

**W. HAY, Manufacturing Chemist,
4 REGENT'S TERRACE, ANLABY ROAD, HULL.**

Agents—Messrs. HEARON, SQUIRE & FRANCIS, Wholesale Druggists, 5 Coleman St., London, E.C.

TO THE MINERAL WATER TRADE.

DISCS FOR ALL PATENT BOTTLES.

These are a great convenience, strengthening the Cap Labels, and keeping the lips of the Bottles free from dirt. The following sorts are kept in stock:—

"PLAIN" DISCS,

Size of this Circle, on Stout Boards, no Printing.

Price—5,000, 8d.; 10,000, 7d.; 25,000, 6d.; 50,000, 5d.; 100,000, 4d. per 1,000.

"GROTESQUE" DISCS,

Printed on good Cardboard in Blue Ink; they consist of a great variety of Amusing Figures.

Price—5,000, 1s.; 10,000, 11d.; 25,000, 10d.; 50,000, 9d.; 100,000, 8d. per 1,000.



"MOTTO" DISCS,

Printed on Stout Boards in Black Ink; they consist of an immense variety of Mottoes and Well-known Sayings.

Price—5,000, 9d.; 10,000, 8d.; 25,000, 7d.; 50,000, 6d.; 100,000, 5d. per 1,000.

"QUOTATION" DISCS,

Printed on good Cardboard, Lake Ink; they consist of an immense number of Quotations from Shakespeare, Byron, Milton, Burns, &c., &c.

Price—5,000, 1s.; 10,000, 11d.; 25,000, 10d.; 50,000, 9d.; 100,000, 8d. per 1,000.

GIVE US A TASTE.
OF YOUR QUALITY
SHAKESPEARE

All the above are assorted in Boxes of 5,000, each Box containing an immense assortment. Prices and Samples submitted for all kinds of Labels, and also for Show Cards, Circulars, Price Lists, and all printed matter required in the business.

J. B. LAMBE & CO.,

PRINTERS TO THE MINERAL WATER TRADE,

199 UPPER THAMES STREET, LONDON, E.C.

Established 1857.]

BISHOP'S

GRANULAR

EFFERVESCENT CITRATE OF MAGNESIA



This perfectly white and delicately clean Preparation,

Prepared with Salts obtained from Pure Fruit Juices of Lemons and Grapes,

Is the most delicious of all the effervescent drinks which have been offered to the public since Mr. ALFRED BISHOP first invented this combination in 1857. It may be taken with perfect safety all the year round, and, besides being a most refreshing beverage, it cools the blood and acts as a mild aperient. It is now prescribed by thousands of physicians as the pleasantest and most efficient aid to **PERFECT HEALTH**; and an imitation of the product has been introduced into the British Pharmacopoeia by the General Medical Council.

It is the best and purest draught which can be taken as a morning restorative, while for delicate persons and young children it is invaluable as an alterative. It ensures a regular action of the skin and of all the organs of the body, and thus invigorates the system instead of exhausting it, as is the case with more violent medicines. It keeps better than other effervescents.

The best chymists in Great Britain and the Colonies keep no other "Granular Effervescent Citrate of Magnesia" than "Bishop's." The reason for this universal preference is that, since its introduction in 1857, it has been found that none of the Imitations of this preparation, *originally introduced by Mr. Bishop*, have been able to compare with it in reliability as a medicine, or in *purity and freshness of flavour* as a cooling drink. Full directions on each bottle.

Dr. REDWOOD, Professor of Chymistry at the Pharmaceutical Society of Great Britain, thus writes:—"I have examined a great many samples of Mr. Bishop's granulated preparations, obtained at various times and from different sources, and have found them to be very uniform in character, fully charged with Carbonic Acid, and obviously made with great care and accuracy."

An old Correspondent writes:—"I have never found your Citrate of Magnesia injurious to health; on the contrary, I should be sorry to be without it. I have used it now for nearly twenty years, and take a teaspoonful every morning in a glass of cold water. *I require no other medicine.*"

Sold by all Chymists, in Bottles, at 1s. and 2s. 6d.

Established 1857.]

BISHOP'S

[Established 1857.]

GRANULAR EFFERVESCENT CITRATE OF POTASH.

Contains eight grains of this admirable anti-febrile salt in each drachm, keeps well, and yields a delicious effervescent draught. It is more efficient, more economical, and more convenient than the ordinary alkaline waters, and much superior to the various mixed powders, which consist mainly of Tartrate of Soda.

A customer writes:—"It is the nicest effervescing preparation I have ever tasted, and is infinitely pleasanter than the bottled waters."

Dr. G. O. DREWRY, in his "Common Sense Management of the Stomach," recommends for Indigestion, Constipation, &c., the "GRANULAR EFFERVESCENT CITRATE OF POTASH" as a very agreeable, mild, and cooling laxative, when taken in doses of one dessert spoonful in half-a-pint of water before breakfast.

Observe that the Name, Trade Mark, and Address of the Maker is on each Bottle.

ALFRED BISHOP, Chymical Factory, Speck's Fields, Mile End New Town, LONDON.

BISHOP'S EFFERVESCENT PORTABLE MINERAL WATER SALTS, of Carlsbad, Seltzer, Pullna, Vichy, Lithia, &c. Far more convenient, and much more economical, than the bottled waters. With directions for use.

Sold by all Chymists, in Bottles, at 1s., 1s. 6d., and 2s. 6d.

CHEMISTS' SPECIALITIES.**SPARKLING, NON-ALCOHOLIC, PHOSPHATED IRON BEVERAGE.****ZOEDONE****BRAIN AND NERVE TONIC AND NUTRIENT TONIC BEVERAGE.****RECOMMENDED BY THE FACULTY.****"OHNE PHOSPHOR KEIN GEDANKE."**

ZOEDONE, a delicious sparkling tonic beverage for daily use; containing the essential constituents of the BLOOD, the BRAIN, and NERVE TISSUE—**NON-ALCOHOLIC.**

ZOEDONE, a PHOSPHATED IRON BEVERAGE, invaluable to everyone engaged in professional, literary, scientific, commercial, athletic, or other pursuits involving the wear and tear of MENTAL OR PHYSICAL STRAIN.

ZOEDONE, specially valuable to CONVALESCENTS and INVALIDS. The healthy will find it a grateful and comforting beverage.

ZOEDONE, recommended by the Faculty.—Medical testimony post free.

ZOEDONE, preferred by many to Champagne at six to eight times the price.

ZOEDONE, mixes perfectly with Claret, other Wines, Beer and Porter.

ZOEDONE, a beverage for WINTER, as well as for SUMMER use, and for any CLIMATE.

ZOEDONE, par excellence a beverage for BALLS, PIC-NICS, EVENING PARTIES, BANQUETS, FETES, and other Festive occasions.

ZOEDONE, an elegant, pleasant, and sustaining beverage for Railway Travellers, Tourists, and Emigrants.

ZOEDONE, put up like Champagne, in Champagne Bottles, and is fit for any table.

ZOEDONE thus described by a medical connoisseur:—"Everyone was struck with the variety and attractiveness of the liquids at the Dinner at the 'Langham.' By universal consent the palm was awarded to 'ZOEDONE,' a sparkling, delicious, exhilarating drink, containing Phosphates and Iron."

ZOEDONE, spoken of by leading journals in corresponding high terms, and assigned the highest place at the MEDICAL BANQUET.

Every Chemist that has introduced ZOEDONE has found a large and regularly increasing sale for it. It is put up in Champagne Bottles, and there is no trouble with empties, as the bottles are included in the price. Customers supplied with Pamphlets for distribution; also a special Circular for medical men stating the formulæ.

Orders should be anticipated by one week.**Report on the ZOEDONE of Messrs. Richard Evans & Co., of Wrexham.**

The Analytical Sanitary Institution, 54 Holborn Viaduct, London, E.C., Sept. 21, 1878.

I have carefully examined the new Aërated Mineral Water manufactured by Messrs. R. Evans & Co., and to which they have given the name of "ZOEDONE." I find the statements made respecting its composition to be fully borne out by the analysis. The "ZOEDONE" is a bright, sparkling, and very pleasant beverage, quite free from medicinal taste; indeed, it forms a most agreeable and elegant vehicle for the administration of the Phosphates of Lime and Iron which it contains, and which are in a complete state of solution.

ARTHUR HILL HASSALL, M.D., London,

Author of "Food, its Adulterations, and the Methods of their Detection."

ZOEDONE is supplied direct by us and our Agents on the following Terms, Cash Prices, including bottles and package, free on Rails at Wrexham—6/6 per doz. in half Champagne Bottles (in 6 doz. cases). 12/- per doz. in large Champagne Bottles (in 3 doz. cases). 6d. per doz. extra for export, packed in casks. *Trade Terms on application.*

WHOLESALE AGENTS:—

LONDON—Messrs. Allen & Hanburys,
 " Messrs. Barclay & Co.
 " Messrs. Corbyn, Stacey & Co.
 " Messrs. Evans, Lescher & Co.
 " Messrs. Savory & Moore.
 BIRMINGHAM—Messrs. Southall Bros. & Barclay.

BRADFORD—Messrs. Harrison, Parkinson & Co.
 BRISTOL—Messrs. Ferris & Co.
 CORK—Messrs. W. & H. Goulding.
 DUBLIN—Messrs. Hamilton, Long & Co.
 HAMBURG—Mr. James H. Gray.

HULL—Messrs. Lofthouse & Saltmer.
 LEEDS—Messrs. Goodall, Backhouse & Co.
 LIVERPOOL—Messrs. Evans, Sons & Co.
 MANCHESTER—Messrs. James Woolley, Sons & Co.
 PARIS—Hogg, 2 Rue Castiglione.

PATENTEE—DAVID JOHNSON, F.C.S.**Manufacturers, RICHARD EVANS & CO., Wrexham, North Wales.**

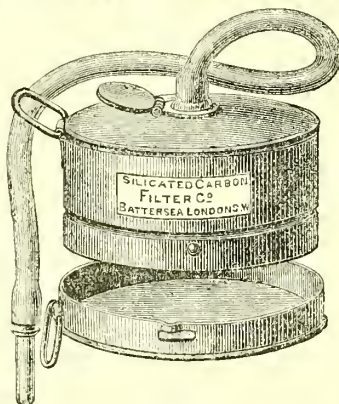
NOVELTY.

SILICATED CARBON POCKET FILTER,

IN GERMAN SILVER, NICKEL-PLATED.

Retailed at **FIVE SHILLINGS** each.

Designed by
MAJOR FRASER,
of the
ROYAL ENGINEERS,
especially
for Officers' Kits.
Weighs only 8 ounces.



It has been approved
by the
Authorities at the
Horse Guards, and has
been largely
used in the Afghan and
Zulu Expeditions.

No. 20 H.

Sample sent free by Post on receipt of **FOUR SHILLINGS**.

DOMESTIC FILTER, NO. 27.



Made in cream-coloured Stoneware, fitted with the Silicated Carbon Media, complete with Cover and Silver-plated Tap.
All sizes of this pattern can now be had with Patent Ice Compartment, which renders this Filter the most perfect of Refrigerators.

| | PRICES. | With Ice Compartment. |
|--|-------------|-----------------------|
| No. O, capacity $\frac{1}{2}$ gall. .. | 10s. 6d. .. | — |
| No. A, " 1 " .. | 14s. 6d. .. | 17s. 6d. |
| No. B, " 2 " .. | 21s. 0d. .. | 25s. 0d. |
| No. C, " 4 " .. | 32s. 0d. .. | 36s. 0d. |
| No. D, " 6 " .. | 42s. 0d. .. | 48s. 0d. |
| No. E, " 8 " .. | 52s. 0d. .. | 60s. 0d. |
| No. F, " 12 " .. | 70s. 0d. .. | 80s. 0d. |

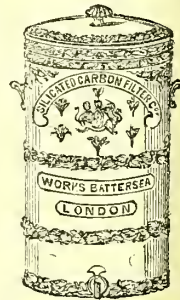
UNIQUE STONEWARE FILTER, NO. 28.

No House should be considered as thoroughly furnished until it is supplied with one or more good Filters.

No Water should be used for Drinking or Cooking without being Filtered.

This Filter is made of a New Ornamental Stoneware, similar in shape to the Domestic Filter, and of two-gallon capacity. When arranged in a Hall or Conservatory, side by side with evergreens, the effect is very pleasing.

Price, with Silver-plated Tap, 30s.



MAIN SUPPLY FILTER, NO. 40.

SPECIALLY ADAPTED FOR
Mansions, Schools, Hospitals, Public
Institutions, Breweries, Distilleries,
Soda Water Manufactories,
Dye Works,

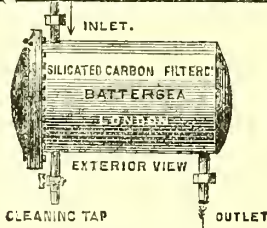
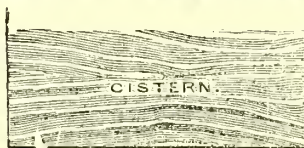
And all other Establishments where large quantities of

PURE WATER

Are required.

The ordinary Sizes kept in Stock are as follows:—

| | |
|---|----------|
| A, $\frac{1}{2}$ -inch or $\frac{3}{4}$ -inch pipe .. | £6 6s. |
| B, 1-inch pipe .. | £9 9s. |
| C, $1\frac{1}{2}$ -inch, $1\frac{1}{2}$ -inch pipe .. | £15 15s. |
| D, 2-inch pipe .. | £26 5s. |



This Filter is extremely simple in construction, and can be either connected with a Cistern or attached to the Main Service Pipe. It requires no attention beyond an occasional opening of the Cleansing Tap, and will deliver a supply of purified water at a rate of 50 to 1,000 gallons per hour, according to size.

Special Contracts entered into
for Large Works, Institutions,
&c., &c.,

FOR PURIFYING THE WHOLE OF THE WATER SUPPLY OF A BUILDING BEFORE USE.

Ensuring Rapid and Perfect Filtration, at either High or Low Pressure.

SILICATED CARBON FILTER CO., CHURCH ROAD, BATTERSEA, LONDON.

PARIS: 131 Boulevard Sebastopol.

NEW YORK: 194 William Street (H. R. Mensing, Agent).

HAMBURG: 9 Deichstrasse (Joseph Schmutzer & Co., Agents).

SILICATED CARBON FILTERS.

SYPHON FILTERS FOR TRAVELLERS.

By means of these Filters pure and perfectly wholesome water may be drunk from any pond or stream by simply immersing the Filter therein and drawing the water through the tube by suction.

Each of these portable Filters may be



No. 20.

used as a Syphon by placing it in a vessel of water, then drawing the water by the mouth, and allowing the flexible tube to hang over the side below the Filter. When once set in operation their action is continuous.

They are readily cleaned from sedimentary matter by merely blowing through the tube, and brushing the surface of the filtering medium.

- | | |
|--|-------|
| A.—Pocket Filter, 2½ inches diameter, in porcelain, with glass mouthpiece, in decorated metal box | s. d. |
| | 2 6 |
| B.—Ditto, 3½ inches diameter, in best stoneware | 5 0 |
| Ditto, with silver-plated tap | 7 0 |
| C.—Emigrant's, 5 inches diameter, with silver-plated tap | 12 0 |
| G.—Pocket Filter, for carrying over shoulder, as supplied to the Forces in Abyssinia and in Zululand, and to the Ashantee Expedition | 3 6 |
| H.—Ditto, nickel-plated, designed by Major Fraser, R.E., and specially recommended by the Horse Guards for Officers' kits | 5 0 |

TABLE FILTER, NO. 24.

Made of stout glass, in 1, 2, and 3 pint sizes, the filtering medium being securely fitted into the bell-funnel, so that it is not liable to become loose, or to allow unfiltered water



to pass. This Filter is peculiarly suited for the Bedroom and for Table use, affording a ready and simple means of obtaining at any time freshly-purified water.

PRICES.

O, 2s. 6d.; A, 4s.; B, 5s. 6d.

Engraved Vine Pattern—O, 3s. 6d.; A, 5s. 6d.; B, 7s. 6d.

POROUS TERRA COTTA FILTER, NO. 29.

Shape of this Filter as Fig. No. 24.

O, 2s. 6d.; A, 4s.; B, 5s. 6d.

SILICATED CARBON BLOCKS.

2 in., 1s. 6d.; 2½ in., 2s. 6d.; 2¾ in., 3s.; 3½ in., 4s.; 4¾ in., 5s. 6d. ea.

SPECIAL QUOTATIONS FOR QUANTITIES.

PRIZE FILTER,

This Filter is constructed in the form and colour of an Etruscan Vase, having inside it a movable pan, into which the Silicated Carbon filtering medium is fitted.



PATTERN NO. 23.

The exterior is made of Porous Ware, which acts with remarkable power as a Refrigerator, keeping the water deliciously cool. Capacity, about Two Gallons.

PRICE, WITH SILVER-PLATED TAP, £3 10s.

DINING-ROOM FILTER, No. 22.

MADE IN MARBLED CHINA.

Size A holds about two gallons; size B, five gallons.

PRICES.

| | |
|---------------------------------|-------|
| A | 35s. |
| B | 80s. |
| A, with Ice Compartment | 42s. |
| (New Patent.) | |
| B, with Ice Compartment | 100s. |
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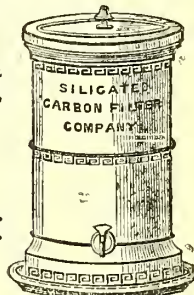
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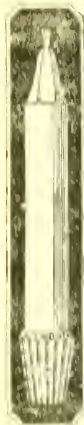
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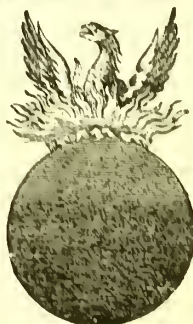
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are guaranteed not to contain a single atom of Lead or any other ingredient calculated to injure the consumer; on the contrary, **THEIR COMPOSITION IS PURE VEGETABLE**; in quality and general appearance they are unsurpassed by any maker, and can be obtained by the gross at £1 16s., less 10 per cent.

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ENO'S "FRUIT SALT,"

"FRUIT SALINE," OR "FRUIT POWDER."

ENO v. STEPHENS IN THE COURT OF CHANCERY.

Shorthand Writer's Notes of Vice-Chancellor Bacon's Summing-up and Judgment.

Sir HENRY JACKSON, Q.C., on proceeding to sum up in detail on the evidence and arguments in the case, was stopped by the VICE-CHANCELLOR in the following words:—

Sir Henry Jackson, I do not think I ought to trouble you. The case has been discussed at very great length. I confess somewhat to my astonishment when Mr. Hemming declined to adopt the evidence as it was before the Court of Appeal, and put the Plaintiff to prove by the same evidence the same facts which had been proved before, I was under the impression that he meant to call witnesses on his own behalf. If that had been, as it probably may have been his intention at that time, there would have been a reason perhaps for repeating over again at very great length and considerable expense, of course to somebody, the evidence upon which the Court of Appeal had acted—I say nothing about what was done in this Court, but the Court of Appeal had acted upon that evidence. The case, however, concludes, and no evidence whatever is adduced by the Defendant—not even his own statement in his Defence is verified by his own affidavit. What is to be done with a case like that? The whole principle of the case was decided upon the first occasion. The Court of Appeal thought it right to adopt that restriction which I had thought it right to adopt, not to extend the Injunction further than the then present exigency of the occasion required. Not one word of the judgment of the Court of Appeal shows that there should be any restriction, or that there should be any restriction when the case came on for hearing. Now it comes on for hearing upon precisely the same evidence, and the evidence, among other things, is, that in the circular which accompanies this bottle of Salt, the words to which the Plaintiff particularly objects are repeated by the Defendant, and repeated by means of copying the Plaintiff's circular. Mr. Giffard says nobody buying the bottle would think of looking at the circular, for it is enclosed in the wrapper, and not even visible to the eye. But the case is one in which the Plaintiff complains of the general similarity and the general appearance of the names which are used by the Defendant, and if a purchaser entertained any doubt, if he was puzzled for a moment between "Vinous" or "Vinous," and Eno's—the sounds being, in one mode of pronunciation, very much alike—if he opened the wrapper and read the circular he would say, My doubts are removed; this is what I want—I want Fruit Saline, and here it is—the circular says it is "Fruit Saline."

The Defendant in his statement at the end of the fourth paragraph says he has not "at any time since the month of August, 1877, used the words Fruit Saline, or Fruit Powder, in any label or advertisement or otherwise in connection with the sale of the said preparation." Under the old system if a defendant had put in his answer, as he must, upon oath, he might perhaps have read that passage and said "the Plaintiff's allegation in that respect is denied." The Defence is not put in on oath and the Defendant declines to pledge his oath to that fact. But it does not rest there; for the evidence is clear and conclusive that after the month of August, 1877, when the Plaintiff, not without some degree of forbearance, as it seems to me, was content to take the Defendant's word that he would not repeat that offence which the Plaintiff complained was doing him that injury which he thought he was suffering, he did, in spite of his promise, repeat that which the Plaintiff called an offence and believed to be an injury to him. The case comes to a hearing, the Defendant insists upon the Plaintiff proving his case. At the Defendant's instance the Plaintiff has proved his case, and, among other things, has proved the utter falsehood of that Defence which is set up in the paragraph which I have read. The matter, therefore, is wholly without doubt, without defence, without excuse of any kind that I can perceive, because, when I am told that I must consider what the intention of the parties was, and when I am told, moreover, that there is no evidence that anybody has been deceived, and the Defendant in his defence says nobody has been deceived, his intention to deceive is not contradicted. That is what the Plaintiff imputes to him; and that is what, I think, the Plaintiff establishes not only from the simplicity of the sign, but from the fact that, when the complaint was first made in August, 1877, they were words which the Defendant admitted he had no right to use. For what reason? Because they were calculated to deceive—calculated to represent the Defendant's goods as those which the Plaintiff was selling under the title which he had adopted.

Upon the general case, therefore, in my opinion, the matter is beyond all doubt. It is proved that the use of the word "Fruit" with other substantives, "Saline" and "Salt," and so on, has been made by the Defendant since the time when he promised not to make it, when he admitted it was unlawful, and which I have no doubt whatever was wholly unlawful. It is said that he endeavoured to keep his promise by pasting something over the word "Fruit." Well, if that meant anything it is a plain admission of the justice of the Plaintiff's claim in that respect. But how can I consider that that is keeping his promise? Whether that pasting over was to be effectual or not would depend upon the consistency of the paste or glue, or perhaps the humidity of the atmosphere or any other accident. That there was no intention to perform his promise, I am satisfied of, and that there has been no performance of his promise I think is clear.

Upon the general case, therefore, I think the Plaintiff is entitled not only to the Injunction in the terms of the Interlocutory Order, but upon those more extensive terms which the Plaintiff asks, by his claim, should be applied to the Defendant's infringement of his rights.

Then there is another subject which is so intimately connected with that that I desired to hear them both together, and I am very glad I did, because, as Mr. Giffard has just told me, that is the main question in dispute between the parties. For the Injunction the Defendant does not seem to care much, though he has violated it, in my opinion, plainly; but he says the question is whether there is a title to register this Trade Mark for which the Defendant proposes to apply. Now that depends upon the words of the Act of Parliament which have been used, the more important of which are "so resembling as to be calculated to deceive." That is a question not to be decided by eyesight; I am invited to lay these two devices side by side, and, since they are not identical and since there are

great differences in their external appearance, to decide that they are not calculated to deceive. To that word DECEIVE I have no right to criticise or quarrel with; it is used in the Act of Parliament, and if I were to give one sense to it, it is plainly in my judgment calculated by the Defendant, meant and intended by him, to deceive any person who is not vigilant enough either in eye or in ear to detect at once the difference between Vinos and Eno's, and the difference between Fruit Salt and any other salt, Eno's title being plainly upon his Trade Mark, Eno's Fruit Salt.

It is not, as I have said, by sight; it is not by the use of a microscope; it is by any other means of detecting more or less of resemblance that you can decide a question which the statute contemplates by using the words that I have referred to. But it is whether the Registrar, whose office it is to register, is satisfied before he performs his function by registering the mark, that the applicant's mark does so resemble as to be calculated to deceive. Can any living man doubt that it is not only calculated—that is intended—but that it is also calculated—that is to say, meant and contrived for the purpose of deceiving—else why does he do it? The world is wide, as has been said in the Judgment referred to, and all things in the animate and inanimate world are open to the Defendant to make a device which shall distinguish his goods from those of any other person. But the Plaintiff having appropriated to himself, and enjoyed for years a device in which the principal characteristic consists of a bunch of grapes, with a Latin motto, and the specific description which relates to Eno's Fruit Salt, the Defendant proposes to register a design in which the principal device is the stem of a vine with a bunch of grapes and some leaves, and a Latin motto around it, and it is to be called "Vinous Salt." If there was nothing in the case but the contrast of these two things, it might, perhaps, to some persons, who trusted only to their eyes, be said there was no resemblance between them, or no sufficient resemblance; but the Registrar is bound to take the whole case into his consideration, he is not to be misled by any mere similarity or dissimilarity. That is not the way that the Court of Appeal, in the latest case that was before it—the Sheffield case—dealt with the question. The Defendant there had as good a right as anybody in the world could have to stamp his own crest or coat of arms, or anything else, upon his commodities. Nobody could dispute it, and nobody, putting the two things together, could say they were so much alike as to deceive. Mr. Hemming insisted that the stamping, being made on a hard metal, was likely to be blurred, and the persons to be deceived. I have a very clear recollection of that case, and I say it would be impossible for a man with eyes, or with one eye, in his head to mistake the device in that case for the device which the Plaintiff desired there to use.

Mr. HEMMING:—Your Lordship will pardon me, I was only quoting the Master of the Rolls.

The VICE-CHANCELLOR:—I know, and have also clearly in my mind what the Master of the Rolls said and what he did not only in the "Dog and Porridge" case, but in that case. The Master of the Rolls' judgment takes a wide and comprehensive view of the subject. He refers to the statute only for the purpose of verifying and corroborating that view, but what he said was "an honest man who wants to mark his goods never thinks of taking the device partly or wholly which some other tradesman is employing for the purpose of marking his goods," and that I take to be the true principle of the case. And, taking all these things together, the Plaintiff's evidence in the first place, the total absence of evidence or statement on the part of the Defendant, excepting the ingenious and elaborate statements which Counsel have addressed to me, there being no statement whatever by him at any time except that he admitted he had done wrong in using the word "Fruit," I am asked to say that there is no such resemblance between those two devices as, between those two men, are calculated to mislead in reference to the commodities tendered in the shape in which they are sent into the world. I think I should be wasting time if I observed further upon it. It is to me clearly manifest not only that there is sufficient resemblance to answer the strictest words of the statute, but that there is a resemblance which has been carefully and intentionally calculated to deceive. And as the Defendant will not pledge his contrary intention I cannot come to a contrary conclusion than that the injunction ought to go in the terms in which the bill prays for it, extending it therefore beyond the Injunctions granted on the Interlocutory Order and upon the motion, to say that the Defendant is not entitled to register the device of a bunch of a vine with a bunch of grapes upon it, and a Latin motto on it and the name "Vinous Salt." There is an end of it, therefore.

Sir HENRY JACKSON:—Well, my Lord, of course I must have the costs. The VICE-CHANCELLOR:—You must have the costs of both.

Sir HENRY JACKSON:—And I think I must ask for the Shorthand Notes of the evidence yesterday. That your Lordship has given on occasions. It was impossible for us to avoid incurring that expense, although it has proved to be absolutely useless. Your Lordship has given it on several occasions, and I must ask your Lordship for the costs of taking the evidence.

Mr. HEMMING:—I do not think your Lordship is ever in the habit of giving costs of that kind, unless there is some special reason for taking the notes. I do not know whether my friend anticipates an appeal upon that evidence. I am sure he will not say so, and I do not think the Court is in the habit of allowing the costs of a shorthand note of the evidence under such circumstances. It is not taken by arrangement. It is not in every case where there is an arrangement between the two sides, and even when there is an arrangement, it is not in every case that the Court allows these costs. I ask your Lordship not to say anything about them unless a writer to be employed. We know that the rule is the other way.

The VICE-CHANCELLOR:—So far from laying down any rule, my notion of this particular subject of the costs incurred by the shorthand writer is that it ought not to be done without a good and sufficient reason for it. Now the reason is to me perfectly apparent and conclusive. Sir Henry Jackson proposed to treat the evidence as it had been used in the Court of Appeal, as being put in here. Mr. Hemming objected to that, and insisted upon the witnesses being examined. In my opinion it became indispensably necessary that a record of that evidence should be kept, and that could only be done according to the present practice of this Court by the employment of a shorthand writer. Mr. Hemming therefore drew down upon his own head the necessity for the employment of a shorthand writer, and having done it without reason as I thought; and having done it without effect as I have decided, in my opinion the costs ought to be included in those costs which the Defendant is bound to pay to the Plaintiff.

Mr. HEMMING:—That does not mean any transcript—there has been no transcript taken.

Sir HENRY JACKSON:—I have the transcript here, and I was prepared to sum up this morning.

Mr. HEMMING:—There was no occasion for it.

Sir HENRY JACKSON:—I do not want of course the costs of any of the speeches; I merely take the transcript of the shorthand notes of the evidence.

The VICE-CHANCELLOR:—I think that must be so, because for anything I know this day week the Lords Justices will have them in their hands.

Mr. HEMMING:—Then would be time to ask for it.

Sir HENRY JACKSON:—My Lord has decided.

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